

Armed Forces Pest Management Board  
Technical Guide No. 18

# Installation Integrated Pest Management Program Guide



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**TECHNICAL GUIDE NO. 18, Installation Integrated Pest Management Program**  
**Guide**

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## **ACKNOWLEDGEMENTS**

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## **AFPMB TECHNICAL GUIDES**

This is one of a series of Technical Guides (TGs) published by the Information Services Division (ISD), Armed Forces Pest Management Board (AFPMB). The AFPMB is a directorate within the Office of the Assistant Secretary of Defense (Energy, Installations and Environment) that recommends policies and procedures, provides guidance, and coordinates the exchange of information related to pest management throughout the Department of Defense (DoD). As a unit of the AFPMB, the ISD collects, stores and disseminates published and unpublished information on arthropod vectors and pests, natural resources, and environmental biology important to the DoD. Other ISD products include country- or region-specific Disease Vector Ecology Profiles (DVEPs). All TGs, DVEPs and other AFPMB documents are available at the AFPMB Web site: <https://www.acq.osd.mil/eie/afpmb/>.

TGs are not policy documents; rather, they provide technical guidance for the use of the DoD pest management community and others. Accordingly, TGs should not be construed or referenced as policy. DoD pest management policies may be found in DoD Directive 4715.1E, "Environment Safety and Occupational Health", DoD Instruction 4150.07, "DoD Pest Management Program," and other DoD directives and instructions, and implementing component directives/instructions/ regulations.

Inquiries, comments or suggestions for improving TGs may be directed to the Chief, Strategy and Information Division at (301) 295-7476, FAX: (301) 295-7473 or email: [osd.pentagon.ousd-atl.mbx.afpmb@mail.mil](mailto:osd.pentagon.ousd-atl.mbx.afpmb@mail.mil).

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## **INTRODUCTION**

This Technical Guide (TG) provides an overview of the most fundamental DoD installation integrated pest management (IPM) program components and guidance for evaluating these programs. It applies to permanent CONUS and OCONUS installations as well as enduring contingency installations that DoDM 4150.07, Volume 1 requires to be in an IPM plan. The Armed Forces Pest Management Board (AFPMB) is providing this TG to help integrated pest management coordinators (IPMCs) who are responsible for installation program oversight and annual maintenance of the integrated pest management plan, but is also a general reference for all pest management service providers (PMSPs) and program stakeholders. This TG identifies the functional areas and elements of an effective program as recognized by the AFPMB. Do not use this in place of compliance assessments or internal and external reviews.

### **1. PEST MANAGEMENT PROGRAM OBJECTIVES**

The installation pest management program supports the installation's mission to ensure military readiness. DoDI 4150.07 requires that IPM plans list pest management program objectives according to potential or actual impact on mission and readiness. Common installation program objectives are:

- Control mosquitoes, rodents and other health-related pests that may transmit human diseases or cause injury and ensure Force Health Protection.
  - Protect buildings and other infrastructure from pest damages.
  - Enhance Force Protection and wildfire prevention through appropriate vegetation management.
  - Protect and enhance natural and cultural resources through management and control of invasive plants, predators and structural pests.
  - Enhance quality of life for all installation personnel in workplaces, transient lodging, and in housing through nuisance pest prevention and landscape maintenance.
  - Support the installation commander's environmental policy.
- Use IPM to reduce the use of, and dependence on pesticides to minimize pollution and protect human and environmental health and safety.

### **2. PEST MANAGEMENT PROGRAM POLICIES AND REQUIREMENTS**

With respect to pest management, it is DoD policy to:

- Use integrated pest management (IPM) to prevent or control pests and disease vectors that may degrade readiness or military operations by affecting the health of personnel or that may damage infrastructure, materiel, or property.

The DoD defines IPM as "A science-based, sustainable, decision-making

process that identifies and reduces risks from pests and pest management related strategies. IPM coordinates the use of pest biology, environmental information, and available technology to prevent unacceptable levels of pest damage using the most economical means and while minimizing risk to people, property, natural resources, and the environment. IPM provides an effective strategy for pest management in all arenas from developed agricultural, residential, and public lands to natural and wilderness areas.”

- Comply with all executive orders and federal regulations that apply to IPM. Although federal agencies are not required to comply with state and local laws and regulations relating to pesticides and pest management, the DoD voluntarily meets the substantive portions of state pesticide and pest management laws and regulations when meeting those standards does not degrade DoD missions. In accordance with status of forces agreements, DoD respects host nation environmental laws, but does not necessarily comply with them; it complies with the Final Governing Standards (FGS) or, where no such FGSs have been issued, the criteria in DoDIs 4715.05.

All licensed/certified DoD and State pesticide applicators are trained in laws and regulations for handling pesticides to include how to read and follow directions on the pesticide label, the primary source of federal and state regulations. Besides the applicators, personnel responsible for compliance include the IPMC, pest management performance assessment representatives/quality assurance evaluators (PARs/QAEs), safety officer, natural resources and other trained and certified environmental and operational personnel. IPMCs and PARs/QAEs receive accreditation training on pesticide safety and pesticide labels during the required DoD courses. PARs/QAEs assess contractors for their compliance with the safety and health specifications in the contract. The safety officer, along with industrial hygiene and occupational health personnel, ensure that the work environment for DoD pesticide applicators is in compliance with federal regulations and DoD policies for occupational safety and health. The IPMC is responsible for establishing liaison with the local regulatory agency. The PMC also serves as a source of regulatory information.

Tables 1 and 2 below outline basic pest management program administrative and operation requirements, respectively.

**Table 2-1. Pest management administrative program requirements.**

<b>Requirement</b>	<b>Description</b>	<b>Reference</b>	<b>Responsibility</b>
<b>Planning</b>	Review and revise the IPM plan annually.	DoDM 4150.07 Vol 1	IPMC
<b>Pesticide Approval</b>	Compile and submit list of new pesticides to command Pest Management Consultant (PMC) for approval for use on the installation.	DoDM 4150.07 Vol 1	IPMC in coordination with PARs/QAEs and pest management service providers (PMSPs)
<b>Recording</b>	Record all pest management operations conducted on the installation after each operation.	DoDM 4150.07 Vol 1 DoDM 4715.05, Vol 4 FGS, Ch 11 7 CFR §110*	PMSPs
<b>Maintaining</b>	Maintain records of all pest management operations conducted on-site indefinitely.	DoDM 4150.07 Vol 1 DoDM 4715.05, Vol 4 FGS, Ch 11 7 CFR §110*	IPMC in coordination with PARs/QAEs
<b>Reporting</b>	Compile and report all pest management operations to PMC monthly.	DoDM 4150.07 Vol 1 DoDM 4715.05, Vol 4 FGS, Ch 11 7 CFR §110*	IPMC in coordination with PARs/QAEs
<b>Pesticide Applicator Certification</b>	Ensure that all personnel applying pesticides on installations have either current DoD pesticide applicator certification or state commercial applicator certification.	DoDM 4150.07 Vol 1 DoDM 4715.05, Vol 4 FGS, Ch 11 40 CFR §171*	IPMC in coordination with PARs/QAEs and PMSPs

<b>Requirement</b>	<b>Description</b>	<b>Reference</b>	<b>Responsibility</b>
<b>Compliance</b>	Ensure that all program elements are in compliance with all federal regulations. DoD policy is to voluntarily comply with local/state regulations if compliance does not degrade DoD mission.	DoDM 4150.07 Vol 1 DoDM 4715.05, Vol 4 FGS, Ch 11	IPMC in coordination with PARs/QAEs and PMSPs
<b>Contract Review</b>	Review pest management contract specifications for compliance with the IPM plan and submit to PMC for final review and approval prior to advertising.	DoDM 4150.07 Vol 1 DoDM 4715.05, Vol 4 FGS, Ch 11	Facilities Support Contracting personnel PARs/QAEs, IPMCs
<b>*applies to restricted-use pesticides only</b>			

**Table 2-2. Pest management operations program requirements.**

<b>Requirement</b>	<b>Description</b>	<b>Reference</b>	<b>Responsibility</b>
<b>Integrated Pest Management</b>	Federal agencies shall use IPM techniques in carrying out pest management activities and shall promote IPM through procurement and regulatory policies, and other activities.	7 U.S.C. § 136r-1 DoDI 4150.07	IPMC PMSPs
<b>Requirement</b>	<b>Description</b>	<b>Reference</b>	<b>Responsibility</b>

<b>Storage</b>	Pesticides kept on installations must be procured and stored in accordance with installation and federal regulations. DoD Policy is to comply with local/ state regulations when meeting those standards does not degrade DoD missions.	DoDM 4150.07 Vol 1 DoDM 4715.05, Vol 4 FGS, Ch 11 AFPMB TG 17 29 CFR §1910 40 CFR §165	Pest control shop supervisor
<b>Application</b>	Only registered pesticides will be used. Applicators must apply pesticides in a manner that ensures safety and protects the environment. A copy of the pesticide label shall be available at the application site.	DoDI 4150.07 DoDM 4715.05, Vol 4 FGS, Ch 11 40 CFR §166	Pesticide applicators
<b>Containers</b>	All containers used to store or transport a pesticide must have the original or copy of the original label attached. Service containers must have attached label identifying: the person responsible for the container, the name of chemical, and the signal word.	DoDM 4715.05, Vol 4 FGS, Ch 11 40 CFR §156	Pesticide applicators
<b>Requirement</b>	<b>Description</b>	<b>Reference</b>	<b>Responsibility</b>

<b>Applicator Safety</b>	<p>The installation must provide procedures, medical support, equipment, and supplies to ensure the safety of DoD pesticide applicators during pest control operations.</p> <p>Note: Contractors are responsible for supplying their own PPE and having a medical support plan in place in the event of an accident.</p>	<p>DoDM 4150.07 Vol 1  DoDM 4715.05, Vol 4  FGS, Ch 11  29 CFR §1910</p>	<p>Medical Department  Safety Department</p>
<b>Cleaning and Disposal</b>	<p>Equipment shall be cleaned to prevent health and environmental hazards due to chemical residues. Prevent water from container and equipment rinsing from entering storm drains and water bodies. Dispose of empty containers properly. Manage and dispose hazardous waste and non-hazardous waste properly.</p>	<p>DoDM 4715.05, Vol 4  FGS, Ch 11  40 CFR §165  40 CFR §260-273</p>	<p>Pesticide applicators</p>

<b>Requirement</b>	<b>Description</b>	<b>Reference</b>	<b>Responsibility</b>
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<b>Spill Prevention</b>	Spill kits shall be maintained in pest control shops and on pest control vehicles. Pest management personnel shall be familiar with the installation spill contingency plan.	DoDM 4715.05, Vol 4 FGS, Ch 11 40 CFR §300	Pesticide applicators Environmental Spill Response Manager
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This TG addresses components of a successful DoD IPM program (e.g., integrated pest management plans, pesticide applicator certification, pesticide approval, reporting, handling, storage, and more). It addresses specific policy-related issues in further detail below.

## 2-2. Pest Management Training And Certification

Only DoD or state certified pesticide applicators may apply pesticides on DoD property with the exception of uncertified applicators in an authorized self-help program. Uncertified personnel may not apply any pesticides in their workspace. Residents of family housing may apply household pesticides for personal relief.

DoD employees who will apply pesticides or will recommend pesticides are required to be DoD trained and certified as pesticide applicators. New employees without pest control experience are required to attend in-person DoD initial training. New employees who have previous pest control experience or licenses/certifications may be eligible to complete initial training by distance learning. The PMC can determine eligibility. Non-appropriated fund (NAF) activity personnel, such as the golf course applicator, may be DoD or state licensed/certified. DoD personnel such as natural resources managers or biologists can be considered pest management professionals, as defined by DoDI 4150.07, and are eligible for initial training by distance learning. Training and certification requirements for DoD pesticide applicators as well as IPMCs and PARs/QAEs are found in DoDM 4150.07, Volume 2. DoD pest control categories are:

- 2 – Forest
- 3 – Ornamental and Turf
- 5 – Aquatic
- 6 – Right-of-Way
- 7 – Industrial, Institutional, Structural and Health-related
- 8 – Public Health
- 11 – Aerial Application
- 14 – Non-Soil Fumigation
- 16 – Rangeland

A list of DoD training courses, certifying officials, and points of contact are found on the AFPMB [Training and Education website](#).

PARs/QAEs and the IPMC are responsible for ensuring that contract PMSPs possess current applicator licenses/certifications and that they are properly qualified in the appropriate pest control categories.

Although many states do not require vegetation control workers who apply general use pesticides to be certified, they must be certified in order to work on DoD property. Many state pesticide regulatory agencies maintain a website to look up pest control licenses and are a resource for PARs/QAEs and IPMCs to verify contract applicator licenses/certifications.

### **2-3. Pesticide Approval**

The PMC approves all pesticides applied on the installation prior to use. The PMC reviews pesticide approval requests to ensure that the product is both Environmental Protection Agency (EPA) and state or host nation registered and it is applied to the appropriate target pest at a site listed on the pesticide label. The PMC may determine any endangered species, sensitive habitat type, or special local needs requirements that may restrict the use of the product on the installation. The PMC may also recommend alternative products if the item requested will result in an increased safety or environmental risk. The PMC may request that the IPMC forward the request to the environmental or natural resources manager for further review prior to approval. Once approved, add the product to the installation's pesticide authorized use list. One can find pesticide labels and their registration status on the EPA's [National Pesticide Information Retrieval System](#).

### **2-4. Recordkeeping And Reporting**

DoD installations must maintain complete records of daily pesticide applications, inspections, and non-chemical pest management operations. Examples of non-chemical operations for which records should be kept are setting and checking rodent traps; snake, bee, bird and bat removal from buildings; placement of sticky traps for stored product pests and other pest insects; draining mosquito breeding sources; pest animal shooting; installation of bird exclusion devices; bird hazing; and mechanical removal of target pest weeds. Records will include the following information: date of application, location and site, type of operation, target pest, area treated, name of applicator, pesticide information (trade name, active ingredient, and formulation), amount of pesticide applied, and calculated pounds of active ingredient applied. Skin and clothing repellents are excluded from the recordkeeping requirement. Installations will permanently archive records of pesticide applications. PMSPs shall submit reports of pest management operations at least monthly to the PMC or as required by the service. The IPMC and PMC review reports to provide program oversight to the installation and generate data for tracking overall DoD

pesticide usage. Pest management records are a valuable data source for analyzing pesticide use, measuring efficacy of pest control methods, identifying seasonal pest infestation trends, program planning, addressing regulatory inquiries, and demonstrating the use of IPM.

## **2-5. Pesticide Facilities**

Pesticide storage/mixing facilities may be operated by the in-house DoD and/or contract PMSPs. Additionally, NAF activities may have a shop for the golf course and recreational areas. Self-help programs may have pesticide storage. Pesticides for deployable units may be stored in supply warehouses. DoDM 4150.07, Volume 1, states that pesticide storage facilities shall comply with all applicable regulatory standards and updated to meet the minimum standards for new pesticide storage facilities. [The AFPMB TG 17 Military Handbook, Design of Pest Management Facilities](#) (CAC required) describes DoD standards. The IPMC will ensure consultation occurs with the PMC during the design phase of new pesticide storage facilities to ensure that the latest requirements are included.

At a minimum, all existing facilities shall meet the following standards:

- An active ventilation system that provides a minimum of six air changes per hour
- Backflow prevention on all water sources used for mixing/filling
- No floor drains and a surrounding berm that provides containment of any pesticide spills
- Warning signs
- Surrounded by a climb-proof fence with access only through doors with locks

Exchanges and commissaries may display pesticides for retail sales. Most are low toxicity household pesticides, repellents or pet treatments, but some exchanges may have garden shops that could carry more toxic pesticides. Find guidance on storage and display requirements for retail sale pesticides in the Tri-Service Food Code, para. 7-301.11 and guidance for meeting these requirements is in [AFPMB TG 45](#). All shops and storage must comply with applicable regulations and policies and are subject to installation environmental and safety inspections.

## **2-6. Pest Management Contracts**

The primary contracts on installations are the base operations support pest control and grounds maintenance contracts. There may also be other stand-alone contracts: noxious/invasive weed control, predator management, habitat restoration, construction contracts that include termiticide pre-treatment or pre-emergent herbicide soil treatment, and mosquito control. Additionally, agricultural and food vendor lease agreements should comply with DoD policies for contracts. The PMC must review and technically approve all contracts and lease agreements prior to advertising. Train and accredit PARs/QAEs, contracting officer representatives (CORs) and others responsible for assessing the performance of contracts and lease agreements in accordance with DoDM 4150.07, Volume 2. Find guidance on

preparing and assessing pest control contracts in [AFPMB TG 39](#).

## **2-7. Aerial Pesticide Applications**

Examples of aerial pesticide applications include control of weeds on bombing ranges, application of mosquito larvicides and adulticides, forest pest control, invasive species control (e.g. Phragmites), and insecticide spraying for agricultural pests. Contractors or the US Air Force 910th Airlift Wing may perform aerial applications. The PMC, certified in category 11, must technically validate proposed aerial projects on installations. The installation must submit a statement of need and justification. The PMC will determine if the project is necessary and that it meets safety and environmental compliance issues. Aerial applications generally require an initial Environmental Assessment. Ensure certification in category 11 of DoD personnel that conduct aerial pesticide applications and PARs/QAEs who monitor these projects. Ensure certification of contractor pilots who perform aerial applications are state licensed/certified for manned or unmanned aerial applications.

## **3. INSTALLATION PEST MANAGEMENT FUNCTIONAL AREAS AND RESPONSIBILITIES**

The success of military pest management programs depends largely on a clear understanding of the roles and responsibilities for the organizations and personnel involved. The following is an outline of common functional areas and personnel across military installations and their duties as presented in DoD policy and guidance documents.

### **3-1. Pest Management Consultants**

Pest management consultants (PMCs) are pest management professionals that are defined by DoDI 4150.07 as “A DoD military officer commissioned in the Medical Service or Biomedical Sciences Corps, or a DoD civilian employee with a college degree in biological, physical, or agricultural science or a closely related field, and whose current job includes pest management responsibilities and being a DoD-certified pesticide applicator.” PMCs are the primary resource for installation pest management programs. Some also serve as DoD pesticide applicator certifying officials and are designated the authority by DoD directives to approve pesticides, operations and programs (i.e., self-help) on installations and in contingency operations.

Civilian PMCs are certified in DoD pesticide applicator categories and typically provide the following products and services:

- Review and technically approve installation IPM plans in accordance with DoD and service policies.
- Provide technical assistance to the installation IPMCs, natural resources and other

environmental managers, safety officers, medical officers, and other regional and installation personnel regarding integrated pest management, pesticide regulatory compliance, and pesticide safety.

- Review and approve or reject pesticides and equipment use on installations.
- Conduct on-site program reviews and environmental compliance program external assessments to ensure compliance with the regulations and IPM plans in accordance with service policies and procedures.
- Compile and report actual pesticide use and pest management operations to appropriate DoD agencies.
- Provide IPM recommendations and pest identification.
- Assist installations with writing or re-writing IPM plans.
- Review and approve contract specifications or lease agreements that include the use of pesticides.
- Provide initial and recertification training for DoD-certified applicators, PARs/QAEs, and IPMCs.

Military Medical (active duty) entomologists serve as PMCs and are certified in DoD pesticide applicator categories typically provide the following products and services:

- Perform technical review of installation IPM plans.
- Review emergency vector-borne disease response plans.
- Review and approve contract specifications that include the use of pesticides.
- Provide technical assistance on the surveillance and control of vectors on permanent and contingency installations.
- Conduct vector-borne disease risk assessments and disease prevention recommendations when requested.
- Provide disease vector management consultation and identification services.
- Provide pest management during contingency operations and for installations in the event of a disaster or disease outbreak.

### **3-2. Installation Commander / Commanding Officer**

The installation commander is responsible for the compliance and enforcement of the pest management program. The commander delegates compliance and enforcement of the pest management program to the integrated pest management coordinator (IPMC) via the IPMC designation letter. Responsibilities of the commander include:

- Budgeting for integrated pest management (IPM) plans, training, operations, and facilities in compliance with legal and DoD requirements.
- Designating an integrated pest management coordinator in writing
- Implement and support the IPM plan.
- Ensuring the conduct of all pest management operations are safe and has minimal impact on the environment.
- Ensuring implementation of an IPM program that reduces dependency on the use

of pesticides.

- Ensuring compliance of the installation's IPM plan and program with all applicable host nation, federal and DoD regulations and, where it does not degrade DoD mission, state, and local regulations.

### **3-3. Integrated Pest Management Coordinator**

The installation commander designates, in writing, the IPMC as their advisor and coordinator of all installation pest management activities, ultimately being the first line of defense for promoting strategies and methods for conducting a safe, effective, and environmentally-sound IPM program on DoD installations. A sample IPMC designation letter is included in the appendix of this document. The individual best suited to fill the IPMC position varies from one installation to another. It is common for IPMCs to wear many hats. For example, an installation IPMC may be a public works or environmental department representative such as a DoD pest controller, a natural resources manager, or a contract performance assessment representative (PAR) or quality assurance evaluator (QAE). What makes sense at one installation does not necessarily fit the mold of another. Whatever position the IPMC holds, they have the pest management program enforcement authority by the installation commander's written designation.

The IPMC actively seeks to familiarize him/herself with all pest management activities on the installation, and be a good communicator.

At a minimum, IPMCs must pass an initial IPMC training course within 1 year of appointment, and maintain this qualification by passing refresher training every 3 years or repeating the initial training course. The primary responsibilities of an IPMC include:

- Coordinating the installation's IPM program with stakeholders including implementation, maintenance, and annual update of the IPM plan.
- Coordinating the revision of the IPM plan every 5 years.
- Ensuring the installation's IPM program is consistent with the Installation Natural Resources Management Plan (INRMP) and other installation operational plans.
- Promoting IPM in the pest management program to cost-effectively and safely manage pests and to prevent adverse environmental impact.
- Coordinating reporting of all pest management operations, to include contracted and credit card purchased pesticide services, on the installation to the appropriate PMC.
- Ensuring current certification and continuing pest management training of pesticide applicators and pest management PARs/QAEs.
- Receiving and compiling lists of new pesticides and uses from all PMSPs on the installation and submitting them to the appropriate PMC for review and approval.
- Maintaining a current list of approved pesticides.
- Acting as liaison between installation, PMC, and local, state, and federal agencies

for pest management and pesticide regulatory issues.

- Ensuring the installation contracting officers submit pest management contract specifications to the PMC for review prior to advertising.
- Participate in internal/external program audits.
- Coordinate with NRM to report newly discovered invasive species to appropriate agencies.
- Proactively engage with transportation personnel and operational units to provide subject matter expertise and assistance with invasive species focused agricultural and biosecurity inspections (See AFPMB TG31) for deployed and redeployed military material to minimize introduction and spread of invasive species.

### **3-4. Installation Environmental Department**

The installation environmental department, including natural resources, provides oversight on environmental protection and compliance regarding pest management operations. Common responsibilities of the department include:

- Reviewing and approving new pesticides and pest management operations that may adversely affect the environment including, if required, environmental reviews in accordance with the National Environmental Policy Act (NEPA).
- Conducting internal compliance assessments of the pesticide and pest management program.
- Ensuring environmental contracts that involve pest management (i.e., invasive weed control, habitat restoration, predator management) are submitted to the PMC for review prior to solicitation.
- Ensuring all PMSPs are aware of requirements for permits for some pest management activities such as National Pollutant Discharge Elimination System (NPDES) permits for mosquito larvicide and aquatic herbicide applications and depredation permits for management of birds protected under the Migratory Bird Treaty Act (MBTA). Ensure that these requirements are included in the IPM plan.
- Ensuring all contracts and lease agreements that include the use of pesticides (such as herbicides) are submitted to the IPMC and PMC for review and approval prior to solicitation.
- Delineating installation sensitive natural areas, threatened and endangered species, species at risk and any associated critical habitat.
- Providing technical review of the IPM plan.

Typically part of the environmental department, the natural resources manager is responsible for managing natural resources at the installation. In this capacity, the manager may be responsible for conducting or contracting some pest management operations (e.g., invasive species, forest management, nuisance wildlife, and BASH). More information may be available in the installation's INRMP. Responsibilities of natural resources managers include:

- Providing information on protected species, endangered or threatened species,

critical habitat, and noxious or invasive species.

- Identifying environmentally sensitive sites in the INRMP and IPM plan where pesticide use and/or pest management activities should be restricted.
- Providing guidance on the management of nuisance wildlife.
- Reviewing the IPM plan to ensure that the plan is compatible with the INRMP.
- Coordinating, as needed, natural resources programs involving pest management with the PMSPs and the IPMC.
- Ensuring INRMP is consistent with IPM plan and pest management operations comply with all applicable environmental statutes.

Cultural resources managers are responsible for managing cultural resources at the installation, and lists properties that are or are eligible for inclusion in the National Register of Historic Places. In this capacity, the manager may be responsible for approving pest control in and around these areas. Likewise, for pest management activities in and around cultural or archeological sites including areas of Native American / tribal interest. More information may be available in the installation's integrated cultural resources management plan, or ICRMP.

### **3-5. Installation Facilities Service Contracting**

Performance assessment representatives (PARs) / quality assurance evaluators (QAEs) monitor and evaluate the performance of contracted PMSPs to ensure that pest control measures are properly applied. The PAR/QAE serves as liaison between the contractor and the IPMC. PARs/QAEs assigned to manage a pest management contract must attend formal PAR/QAE DoD pest management training and complete refresher training every three years. The PAR/QAE must:

- Assist contract writers with preparing contracts that ensure that all requirements of the IPM plan and DoD policy are included in the contract specifications.
- Coordinate with the pest management consultant for a review of pest management contract specifications prior to advertisement for bid.
- Maintain copies of each contract on file.
- Monitor pest management contractors; ensuring effective and safe application of pest management practices, identifying and documenting discrepancies, and seeking corrective action with contractors in accordance with the contract.
- Ensure contractors record all pest management activities and submit reports including actual pesticide use through the appropriate pest management reporting system or to the PMC monthly.

All pest management PARs/QAEs shall be delegated the authority (in the contract and in the pest management PAR/QAE appointment letter) to halt any contract pesticide applications that:

- Endanger or present a hazard to humans, animals, or the environment.
- Violate contract specifications, or applicable federal, state, DoD, or service regulations.

- Violate the pesticide label.

### **3-6. Installation Facilities Engineering and Planning**

Proper planning and design of installation facilities and landscaping can provide long-term prevention of pests reducing or eliminating the need for pesticide use, pest management services, and future structural or landscape renovations. Architects and engineers should use the following:

- Consider pest prevention in building and landscape design.
- Incorporate Unified Facilities Guide Specifications (UFGS) for termiticide applications and termite barrier installations in construction projects.
- Incorporate pest prevention in the Unified Facilities Criteria (UFC) for Landscape Architecture into landscaping projects.
- Consult with installation IPMC, PAR/QAE, PMSPs, and the PMC regarding pest prevention in facilities and landscape planning and design and providing input into building exterior and architectural plans.

### **3-7. Medical Treatment Facility / Medical Group Public Health / Preventive Medicine**

Public health / preventive medicine personnel must:

- Act as advisor and liaison to the installation commander for public health pest prevention and management.
- Conduct surveys for pests of medical importance, such as cockroaches, mosquitoes, bed bugs, etc., through habitability and food service sanitation inspections.
- Conduct surveys and surveillance of medically-important pests and vectors in coordination with the installation PMSPs. Based on vector surveillance data, conduct risk assessments and establish triggers or action thresholds for vector management to mitigate human health threats when vectors or medically important pests pose a public health threat, interfere with duty performance, or affect unit morale
- Establish and maintain liaison with local health agencies as they pertain to vector management and vector-borne and zoonotic disease prevention.
- Maintain current certification as DoD category 8 (public health) pesticide applicators, based on service-specific requirements.
- Develop and maintain an emergency vector-borne disease response plan in case of a vector-borne disease outbreak or disaster (template available in appendix F).
- Provide technical review of the IPM plan.
- Provide recommendations for sanitation and pest prevention based on monthly inspections.

### **3-8. Industrial Hygiene**

Industrial hygiene personnel perform surveys (i.e., for pest management employees) to characterize occupational exposures (i.e., to inherent chemical, physical, ergonomic, and biological stressors) and control measures (e.g., engineering—local exhaust and mechanical dilution ventilation systems; administrative—warning signs, standard operating procedures, training requirements, etc.; and personal protective equipment—respiratory protection and chemical resistant clothing). In addition, they use industrial hygiene surveillance information to initiate, continue, or end medical surveillance.

### **3-9. Occupational Health**

Occupational health personnel are responsible for performing all necessary medical surveillance (such as physical examinations and cholinesterase testing) for government pest management personnel, as deemed necessary.

### **3.10. DoD In-House Pest Control**

DoD in-house pest control has DoD certified pesticide applicators that perform routine pest management on their installation and respond to facilities' service requests. Facilities may include pesticide storage, a mixing site, equipment and vehicle storage, cleaning facilities, locker/shower room, and office. The DoD pest control shop must:

- Practice IPM.
- Maintain and ensure safety and regulatory compliance of pesticide storage and mixing areas.
- Voluntarily comply with state pesticide and pest management laws and regulations when meeting those standards does not degrade DoD missions.
- Ensure compliance with DoD requirements for applicator certification, pesticide approval, and pest management operation reporting.

### **3-11. Contract Pest Management Service Providers**

Contract pest management service providers (PMSPs) are required to be certified as pesticide applicators by the appropriate state department or host nation. These responsibilities apply to all contractors on an installation. Contract PMSPs must:

- Practice IPM.
- Conduct pest management operations in accordance with contract specifications or lease agreements, the IPM plan, and, federal, state, or host nation regulations.
- Submit a list of pesticides proposed for use on the installation to their government representative.
- Communicate all pest management issues and requirements via the government representative.

- Submit daily pest management operation records to the government representative or through the appropriate electronic pest management reporting system.
- Maintain and ensure safety and regulatory compliance of on-site pesticide storage and/or mixing areas, if permitted by the contract.
- Grounds maintenance contractors must ensure that new plants brought onto the installation for landscaping in recreational areas are not invasive, infested with pests, or infected with disease.

### **3-12. Morale, Welfare, and Recreation / Marine Corps Community Services**

Morale, Welfare, and Recreation (MWR) and Marine Corps Community Services (MCCS) provide recreational activities for military and civilian personnel on military installations. Where applicable, this includes maintenance of golf course and athletic fields. Additionally, MWR/MCCS often establishes and manages lease agreements with commercial food concessions. With respect to golf course and athletic field maintenance, MWR/MCCS activities must:

- Practice IPM.
- Ensure that all personnel who apply pesticides maintain current certifications in the appropriate categories (see section 2 for more information).
- Ensure the PMC approves all pesticides prior to use.
- Provide copies of the pesticide labels to the IPMC.
- Maintain and report records of all pesticide applications in accordance with the requirements outlined in the installation's IPM plan.
- Maintain the pesticide storage and mixing facility in accordance with the requirements of the IPM plan and installation regulations.
- Obtain and ensure proper maintenance of adequate supplies of pesticides, pesticide dispersal equipment, and personal protective equipment (PPE).
- Ensure that landscape cultural management practices are used to maintain the health of plants and turf to prevent disease and pest infestations.
- Ensure that new plants brought onto the installation for landscaping in recreational areas are not invasive, infested with pests, or infected with disease.

With respect to food establishments, MWR/MCCS must:

- Ensure maintenance of proper sanitation in all food handling facilities.
- Submit any contract specifications (outside of the installation pest management contract) for pest management to the IPMC for technical review prior to submitting the contract for bid.
- Ensure that only current, licensed pesticide applicators apply pesticides.
- Ensure reports of all pest management activities in accordance with the requirements outlined in the IPM plan (for pest management that is conducted separately from the installation contract).

### **3-13. Exchange Service**

Exchanges [Navy Exchange (NEX), Marine Corps Exchange (MCX), Army and Air Force Exchange Services (AAFES)] may display and sell household and garden pesticides. Additionally, the exchanges often establish and manage lease agreements with commercial food concessions. With respect to pesticide sales, exchanges must:

- Ensure display of pesticides in accordance with the pesticide label and other federal, state/host nation, and local regulations.
- Ensure proper training of store employees on emergency procedures in the event of a pesticide spill.

• Ensure that pesticides sold at OCONUS locations have labels written in English.

With respect to food concessions, the exchanges must:

- Ensure maintenance of proper sanitation in all food handling facilities.
- Submit any contract specifications (outside of the installation pest management contract) for pest management to the IPMC for technical review prior to submitting the contract for bid.
- Ensure only current, licensed pesticide applicators apply pesticides.
- Ensure reporting of all pest management activities in accordance with requirements outlined in the IPM plan (for pest management that is conducted separately from the installation contract).

### **3-14. Commissary**

Commissaries not only sell food and healthcare items, but also household pesticide items. Commissaries must:

- Maintain proper sanitation in the store.
- Ensure food items for sale are free from stored product pests.
- Ensure surveillance and control for invading pests occurs in commissary facilities.
- Coordinate with the Army Veterinary Services or Air Force Public Health office on pest or sanitation problems.
- Ensure the display of pesticides in accordance with the pesticide label and other federal, state, and local regulations. Guidance on storage and display requirements for retail sale pesticides can be found in the Tri-Service Food Code, para. 7-301.11 and guidance for meeting these requirements is in [AFPMB TG 45](#).
- Ensure proper training of store employees on emergency procedures in the event of a pesticide spill.
- Ensure that pesticides sold at OCONUS locations have labels written in English.

### **3-15. United States Army Veterinary Services**

The veterinary services department provides clinical support for military working dogs and services for privately owned pets and animals. Veterinary Services also

provide food safety inspections for the commissary and for other food items delivered to the installation. Veterinary Services provides consultation on zoonotic diseases such as rabies and feral animal risk mitigation. Responsibilities of the Army Veterinary Services often include:

- Conducting surveillance for pests, which damage, destroy, and contaminate food stored in the commissary and installation facilities.
- Ensuring stored field rations (e.g., meals, ready to eat (MREs), etc.) are free from pests.
- Providing review of distribution/shipments when needed for IPM concerns (e.g. commissaries).
- Conducting surveillance for pests in military working animal facilities.
- Advising public health/preventive medicine and the IPMC of any zoonotic diseases that may require pest management.
- Providing advice and education to pet owners on preventing pest infestations.
- Providing advice and support in controlling feral animals.

### **3-16. Housing**

All public-private venture (PPV) housing must comply with federal, state, and local laws and regulations and should provide information on and promote IPM to residents. Where applicable, they must also comply with Service-specific policies regarding pest management. DoD-owned and managed housing must comply with the following:

- Use and promote IPM to residents.
- Use current DoD or state-certified PMSPs.
- Contractors must comply with the requirements in paragraph K above.
- Implement and conduct housing self-help programs in accordance with DoD directives and the IPM plan.

### **3-17. Building Occupants and Barracks/Housing Residents**

All installation personnel have the responsibility to:

- Apply good sanitary and pest exclusionary practices to prevent pest infestations.
- If permitted for personal use, use pesticides in accordance with the pesticide label.
- Coordinate and cooperate fully with PMSPs in scheduling pest management and preparing the areas for pesticide treatment if necessary.

### **3-18. Agricultural Outleases**

Persons conducting pest control on agricultural outleases may be a private farmer or commercial business. They may apply pesticides themselves or use an individual or business for hire. Lessees must:

- Practice IPM.
- Conduct operations and apply pesticides in accordance with the lease agreement and that has been reviewed and approved by the PMC.
- Ensure prior approval by the PMC of all pesticides and reporting of all pest management activities in accordance with the requirements outlined in the IPM plan.
- Ensure that for-hire pesticide applicators have current state licenses/certification. Ensure appropriate training and certification of private applicators and field workers that apply pesticides in accordance with state regulations.

### **3-19. Self-Help Program Manager**

Self-help pest management programs for housing and non-housing areas on DoD installations are authorized by a PMC when they are cost-effective and when IPM monitoring indicates the need for control. Examples of self-help programs that may be available are: stinging insect pest control for maintenance personnel, fire ant control, vegetation control using glyphosate, and barracks/office pest control. Self-help program managers must:

- Ensure program(s) are reviewed and approved by the IPMC and then by the PMC.
- Assume responsibility as the primary point of contact for the program.
- Ensure training occurs and is documented for all personnel that will be applying pesticide.
- Ensure only low toxicity, ready-to-use (RTU) pesticides approved for use by the PMC are used.
- Ensure application of pesticides occurs directly from the original container.
- Ensure the practical treatment of area(s) are small enough with RTU pesticides.
- Ensure storage of all pesticides in accordance with the pesticide label.
- Ensure reporting of all pesticide use.

Direct any personnel or departments conducting unauthorized pesticide applications to immediately cease applications. To request review of a proposed program and submit a statement of need, the IPMC must contact the PMC.

### **3-20. Airfield Operations**

Bird Aircraft Strike Hazard (BASH) management programs are required at all installations with an airfield and aircraft operations. BASH is an aviation safety program usually led by the airfield operations officer at installations and involves the aircraft squadrons and installation personnel. The installation PMSPs and natural resources manager support the program and are often members of the BASH working group or team. Pest management for BASH involves not only birds, but medium to large mammals (i.e., coyotes, foxes, rabbits, etc.) that can also be struck while crossing taxiways and runways. Pest management also involves not only managing the animal hazards but the environment that attracts them to the airfield. This includes control of vegetation that provides animal harborage and coverage;

rodents and insects that serve as food; and birds in and on structures such as hangars, fences and trees. BASH program responsibilities are to:

- Practice IPM.
- Ensure all airfield PMSPs, including USDA Wildlife Services, comply with federal, state and local regulations and the requirements of DoD policies and directives.
- Report all pest management operations.

## **4. THE INTEGRATED PEST MANAGEMENT PLAN**

### **4-1. Purpose**

DoD installations must have an IPM plan that lists pest management program objectives according to potential or actual impacts on the installation's mission and readiness. The IPM plan is a comprehensive, long-range document that captures all of the pest management operations and pesticide-related activities conducted on the installation. It incorporates pest management practices and the local, state, federal, DoD regulations and other applicable service instructions. It supplies comprehensive information about the pest management program to installation staff and internal and external stakeholders and compliance regulators.

### **4-2. Preparation**

The installation is responsible for having an IPM plan and the IPMC is responsible for maintaining and updating the plan. IPM plan authorship can and does vary between services and installation circumstances (i.e., funding availability). IPMCs should coordinate with the PMC to determine the best way forward for their installation. Regardless of who prepares the IPM plan, the document should be reviewed by all appropriate signing authorities (see Table 3), and ultimately reviewed and approved by the appropriate civilian and/or military PMCs.

### **4-3. Format**

At a minimum, IPM plans must address the elements in Table 3 below

**Table 4-1. Integrated pest management plan elements.**

<b>Element</b>	<b>Description</b>
<b>Cover and Signature Pages</b>	<ol style="list-style-type: none"> <li>1. Title</li> <li>2. Installation name or unit identification code</li> <li>3. Approval and technical review</li> </ol> <p>A. Signatures from:</p> <ol style="list-style-type: none"> <li>(1) IPMC</li> <li>(2) Installation environmental coordinator, engineer, or equivalent</li> <li>(3) Fire department supervisor</li> <li>(4) Natural resources program manager</li> <li>(5) Cultural resources program manager</li> <li>(6) Public health or preventive medicine representative</li> <li>(7) PMC</li> <li>(8) Installation contracting officer (where some or all aspects of pest control work are done by contract)</li> <li>(9) Installation commander</li> </ol> <p>B. Dates of last annual review</p>
<b>Executive Summary</b>	Overview of the installation mission, general information about the pest management program, and specific focus areas
<b>Introduction</b>	<ol style="list-style-type: none"> <li>1. Location, facilities, and mission of the installation</li> <li>2. List of pest management program objectives according to potential or actual impact on mission and readiness</li> </ol>

<p><b>Program Administration</b></p>	<ol style="list-style-type: none"> <li>1. Roles and responsibilities <ul style="list-style-type: none"> <li>• Commander or commander's representative</li> <li>• IPMC</li> <li>• Installation environmental coordinator, engineer, or equivalent</li> <li>• Public health or preventive medicine representative</li> <li>• PMC</li> <li>• Natural resources program manager</li> <li>• Cultural resources program manager</li> <li>• Installation contracting officer</li> </ul> </li> <li>2. DoD and Service specific directive and policy requirements such as pesticide approval, applicator certification, contract review, and reporting.</li> <li>3. Specify State or host nation pesticide applicator certification requirements that comply with DoDI 4150.07.</li> <li>4. Program compliance with federal, state, FGS and local regulations</li> <li>5. Interservice support agreements</li> <li>6. Coordination with DoD, other federal, State, and local agencies</li> </ol>
<p><b>Program Operations</b></p>	<ol style="list-style-type: none"> <li>1. Description of pests and disease vectors and hosts that occur or have the potential of occurring on the installation and the IPM methods for prevention and control.</li> <li>2. Description of pesticide management including pest control shop, pesticide storage, vehicles, application, cleaning and disposal.</li> <li>3. List of DoD and contract pest management service providers and the facilities to which they provide service and the type of service provided.</li> <li>4. Guidance for the implementation of all applicable regulations that prevent the interstate and international movement of invasive and quarantinable pests.</li> <li>5. Preventive or regularly scheduled pesticide applications that are approved for use on the installation.</li> <li>6. Description of pest management operations in sensitive areas such as child development centers, schools, medical treatment facilities, and food service facilities.</li> <li>7. Description of pest and retail pesticide management in commissaries, recreational facilities, and exchange facilities.</li> </ol>

<b>Program Operations Health and Safety</b>	Description of safety and health hazards for applicators and the public including protective measures: 1. Medical surveillance of pest management personnel 2. Hazard communication 3. Personnel protective equipment 4. Fire protection services 5. Pest management vehicle(s) 6. Pesticide shop health, safety, and hazard surveys (including air sampling and ventilation systems) 7. Pesticide spills
<b>Environmental Considerations</b>	1. Identification of environmentally sensitive areas and threatened and endangered species. 2. Description of environmental protection from impacts from pesticides and pest management operations. 3. Description of coordination with the cultural and natural resources programs
<b>Emergency Pest Management</b>	1. Description of potential public health emergencies including risk for vector-borne and zoonotic diseases and response plan. 2. Description of potential agricultural and quarantinable pest emergencies and response plan.
<b>Program Resources</b>	1. IPM references and links 2. List of local and state resource agencies (i.e., agricultural commissioner, vector control, cooperative extension, universities)
<b>Annexes / Appendices</b>	1. List of approved contracts 2. List of certified pesticide applicators (certification number and expiration date) 3. PMC-approved pesticide list with EPA or HN registration numbers, target pests, and application sites 4. Emergency Vector-borne Disease Response Plan (plan template in appendix) 5. Copies of references 6. List of pest management priorities 7. Copies of Intra-service Support Agreements

#### 4-4. Implementation and Maintenance

The commander implements an IPM plan upon review and signature from command leadership and pest management program stakeholders identified in Table 3 above. The IPMC oversees compliance with the plan.

The IPM plan is a living document and is maintained to reflect current pest management operations, pest management certifications, pesticide authorized use list(s), etc. At a minimum, the IPMC and pest management consultant shall review, update, and approve the IPM plan annually. A full revision shall be completed every 5 years.

## 5. PEST MANAGEMENT PROGRAM REVIEWS

Periodic on-site reviews are required to maintain the program and to ensure regulatory compliance with federal, DoD, service, state, and local regulations. Discussion of program review elements occurs below.

### 5-1. Internal

The IPMC shall conduct an annual internal review in coordination with the PMSPs and other functional area points of contact (POCs). The review should include updating contract information, applicator certifications, use of pesticides, and pest management operations on the installation, as well as updating pesticide use records. A sample pest management program self-assessment checklist is available in the appendix of this technical guide.

### 5-2. External

A PMC shall perform an on-site review of the entire pest management program at least every three years to ensure compliance with the IPM plan. When possible, they will conduct reviews in conjunction with Environmental Management System (EMS) / Environmental Compliance Evaluation (ECE) audits.

### 5-3. Program Review Considerations

- Preparation: Notify and coordinate an on-site visit with installation personnel to allow sufficient preparation time.
- In-brief: If requested, with Commander / Commanding Officer and other key pest management program stakeholders.
- Conduct: Meet with pest management program stakeholders, discuss pest issues and survey facilities. Note and discuss discrepancies and/or commendable program aspects. Areas of concern to the reviewer include, but are not limited to:
  - o Public Health / Preventive Medicine to discuss: mosquito surveillance, emergency vector control plan, all food handling facilities, and child development center(s).
  - o Housing / lodging.
  - o Pesticide facility inspections: storage, equipment, mixing, safety, spill kits, etc.
  - o Pest control contractors.
  - o Golf course superintendent visit and inspection.
  - o Natural resources issues, invasive species, forestry, etc.
  - o Exchange, commissary, snack bars, pesticide storage and sales.
  - o Construction, pre-treatment for termites, etc.
  - o Compliance issues: certification, records, labeling, etc.

- Out-brief: If requested. Provide appropriate information for corrective action to be taken.
- Follow up: Coordinate recommendations with all affected groups. Communicate plan of action and resolved matters to the PMC.

## **6. PROGRAM RESOURCES**

### **6-1. Armed Forces Pest Management Board**

The AFPMB recommends policy, provides guidance, and coordinates the exchange of information on all matters related to pest management throughout the Department of Defense (DoD). The AFPMB's mission is to ensure that environmentally sound and effective programs are present to prevent pests and disease vectors from adversely affecting DoD operations. The [AFPMB website](#) is a valuable resource to any pest management professional.

### **6-2. Cooperative Extension Office**

State Cooperative Extension offices (or host nation equivalent) respond to the needs of individuals and organizations in their state by providing information and guidance in the areas of agriculture, natural resources, and consumer sciences. Cooperative extensions are usually associated with the state's land grant university and many have websites with extensive information on state specific pests and IPM.

### **6-3. State Pesticide Regulatory Agency**

State pesticide regulatory officials (or host nation equivalent) can provide information regarding state and local pesticide regulations. Some states may have regulators at the county level.

### **6-4. State and Local Departments of Health**

This includes state and county public health agencies and regional mosquito control or vector management agencies. Public health biologists often provide vector surveillance and control assistance throughout their respective states and local regions. They are state-certified in public health pest management and provide assistance to counties that either do not have or only have limited vector surveillance programs.

## APPENDIX

## A-1. Sample IPMC Appointment Letter

From: Commanding Officer/Commander, [installation name]

To: [Name of designee]

SUBJ: APPOINTMENT AS THE INSTALLATION INTEGRATED PEST MANAGEMENT COORDINATOR

Ref: (a) DoD Instruction 4150.07: Department of Defense Pest Management Program  
(b) [Service-specific instruction(s)]

1. References (a) and (b) require that Department of Defense installations have a formally appointed Integrated Pest Management Coordinator (IPMC). By notice of this letter, you are appointed to this position.
2. As IPMC, you are to act as my representative in all matters related to pesticides and pest management. You have the authority to inspect any pesticide facility or operation on the installation, including appropriated and non-appropriated fund operations.
3. Your responsibilities are:
  - a. Coordinate and ensure implementation of the installation Integrated Pest Management Plan (IPM plan), and ensure that it is reviewed and updated annually. Submit the annual updates to the regional pest management consultant for review and approval.
  - b. Function as the primary point of contact for the installation's pest management program and serve as pest management liaison between public works, environmental, medical, supply, housing, tenant commands, and pest management service providers (PMSP) as needed.
  - c. Ensure recording and reporting of all pest management operations.
  - d. Ensure PMC approval of pesticides used by all PMSPs.
  - e. Ensure the proper training of all pesticide applicators on the installation.
  - f. Ensure forwarding of contracts involving pest management to the command pest management consultant for review and technical approval before advertisement.
  - g. Advise the command pest management consultant of changes in the program and contact with pesticide regulatory agencies.
  - h. Update aerial application project documentation, particularly the associated environmental assessment, during planning of the subsequent aerial application operations.
4. This appointment is effective immediately and remains in effect unless revoked or until you are properly relieved.

Copy to:

[regional pest management consultant]

## A-2. Sample IPM Plan Table of Contents

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### A-3. Template IPM Sheet

The following template may be used for providing general guidance for control of common pests. The information should be used as a basis for pest management action, but should not be considered “regulations” for the job. IPM sheets should be used as guidelines to help implement reasonable, cost effective, safe, environmentally responsible control of pests. The IPMC or other pest control personnel may choose to establish different thresholds and use IPM methods that are more appropriate to their local circumstances. Write in any new ideas or programs to maintain a document that will remain applicable over time. Any suggested pesticides from these sheets are required to be approved before use.

<b>[Pest Common Name]</b>	
<b>TARGET PEST(S)</b>	[Common name (scientific name)]
<b>PURPOSE</b>	[Insert reasoning for control here, i.e., nuisance, medical importance, etc].
<b>RESPONSIBLE PARTY</b>	<ul style="list-style-type: none"> <li>• [Responsible Party 1]               <ul style="list-style-type: none"> <li>o [Responsibility 1].</li> <li>o [Responsibility 2]</li> </ul> </li> <li>• [Responsible Party 2]               <ul style="list-style-type: none"> <li>o [Responsibility 1]....</li> </ul> </li> </ul>
<b>SURVEILLANCE</b>	
<b>METHODS</b>	• [i.e., personnel complaints, visual inspections, sticky traps, etc.]
<b>FREQUENCY</b>	•
<b>ACTION THRESHOLD</b>	
<b>NON-CHEMICAL CONTROL</b>	
<b>[i.e., SANITATION, MECHANICAL REMOVAL, etc]</b>	•
	•
<b>CHEMICAL CONTROL</b>	
<b>COMMON ACTIVE INGREDIENTS</b>	•
<b>METHOD OF DISPERSAL</b>	•
<b>RESTRICTIONS</b>	•
<b>CONSIDERATIONS</b>	
<b>SENSITIVE AREAS</b>	•
<b>PROHIBITED PRACTICES</b>	•
<b>SAFETY AND ENVIRONMENTAL PRECAUTIONS</b>	•
<b>ADDITIONAL INFORMATION</b>	

### A-4. Pest Management Program Review Sample Checklist

[This is a SAMPLE checklist only. Each installation should coordinate with the PMC to develop a checklist appropriate to the installation's pest management program.]

Installation Name: \_\_\_\_\_

Date: \_\_\_\_\_

Name of Person Completing Checklist: \_\_\_\_\_

Review Item	Reference	Verification and Documentation	Yes	No	N/A
<b>Integrated Pest Management Coordinator</b>					
Is IPMC designated and appointed by commander by letter?	M4150.07-V1: Para. 3.2 Table 1	Copy of appointment letter.			
Is IPMC properly qualified and trained? If an IPMC selects or applies pesticides, he or she must be certified as a DoD pesticide applicator.	M4150.07-V2 Para.3.4	Copy of course completion certificate or DoD pesticide applicator certificate.			
Does the IPMC oversee the installation pest management program and pest management plan and remain aware of and familiar with all pest management operations on the installation?	M4150.07-V1: Para.3.1 and 4.1.c	Operations documented in the installation integrated pest management plan; IPMC has copies of pesticide approvals and pest management reports; IPMC is actively involved in pest management decision making.			
<b>Integrated Pest Management Plan</b>					
Does installation have a current comprehensive IPM plan? IPM plans remain current for 5 years.	M4150.07-V1: Para. 3.2 Table 1	Copy of IPM plan.			
If installation does not have an IPM plan, has command planned and budgeted for development and maintenance of an IPM plan?	M4150.07-V1: Para. 3.2 Table 1	IPM should be listed as a deficiency and programmed for funding.			
Is IPM plan signed by CO/CG?	M4150.07-V1: 3.4 Table 2	IPM plan signature page.			
Is IPM plan reviewed and signed by IPMC, medical department, and pest management consultants?	M4150.07-V1: Para. 3.2 Table 1	IPM plan signature page.			

Review Item	Reference	Verification and Documentation	Yes	No	N/A
Is IPM plan updated annually by qualified personnel (trained or certified IPMC or PAR) and current (contains current POCs, contracts, applicator licenses, list of approved pesticides, etc.)?	M4150.07-V1: 3.2 Table 1	View applicator licenses, dates of pesticide approvals, and other items that indicate the information is not outdated. Review IPM plan information.			
<p>IPM plan includes the following sections:</p> <ul style="list-style-type: none"> <li>• List of program objectives</li> <li>• Description of all pest management program requirements (including in-house, contract, agricultural outlease, golf course, NAF, GOCO, tenant, and natural resources)</li> <li>• Description of IPM procedures for all pest and disease vectors</li> <li>• Identification of program resources (facilities, equipment, etc.) to support program</li> <li>• List of pesticides approved by pest management consultant</li> <li>• Procedures for managing spills</li> <li>• Identification of planned measures to comply with DoD MOA and with state pesticide regulatory office regarding use or application of pesticides</li> <li>• Description of contracted pest management operations</li> <li>• Description of operations with special environmental considerations</li> <li>• Identification of animal control efforts</li> <li>• Identification of potential vector-borne diseases and collaboration with local health agencies</li> <li>• Applicable laws and regulations</li> <li>• Agricultural outlease operations</li> </ul>	M4150.07-V1: 3.2 and 3.3	IPM plan contains information and sections as outlined in M4150.07-V1, Section 3.			

Review Item	Reference	Verification and Documentation	Yes	No	N/A
Location and information on pesticide applications (e.g., mosquito control, forestry, right-of-way, aquatic, aerial) likely to affect threatened and endangered species and associated critical habitat are coordinated with installation natural resources managers and other appropriate stakeholders and included in the IPM plan.	M4150.07-V1: 5.10.a.(2)	Information is in the IPM plan.			
All pest management program stakeholders have copy of or ready access to current IPM plan.	BMP	IPM plan readily available to stakeholders as hard or electronic copy.			
<b>Program Maintenance</b>					
Have IPMC and PMC conducted program reviews in order for the installation to maintain program and IPM plan?	M4150.07-V1: Para. 3.2 Table 1, M4150.07-V1: Para. 4.1.a	IPMC should maintain copies of program review reports.			
Have deficiencies and recommendations from past reviews been resolved or addressed in order to maintain and improve program?	M4150.07-V1: Para. 3.2 Table 1	Documentation of corrections on file and/or corrections made were noted in follow-up inspection or review.			
Do DoD pest management personnel remain current in IPM technologies?	BMP	Personnel attend training workshops, are provided in-service training and/or have access to pest control trade journals.			
<b>Training and Certification</b>					
Do all installation pest management personnel who apply or supervise the application of pesticides have current DoD certification or EPA-approved certification or license?	4150.07: Section 4	Copies of all licenses and certificates on file and applicators have cards while applying.			
If DoD applicator certification expired, has applicator received a six-month extension from a PMC/certifying official?	M4150.07-V2: 5.3	Correspondence from PMC/certifying official approving extension.			

<b>Review Item</b>	<b>Reference</b>	<b>Verification and Documentation</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
If DoD applicators are not certified (i.e., apprentices), are they under the direct supervision of a certified applicator while performing pesticide applications?	M4150.07-V2: 3.2.b	Observe operations to ensure proper supervision, if necessary.			
Was evidence of contractor pesticide applicator licensing or certification provided to contracting officer prior to award?	4150.07: Section 4	Copies of all licenses and certificates on file and applicators have cards while applying.			
Are PARs/QAEs trained in performance assessment evaluation and pest management technology?	M4150.07-V1: 4.6.d	Copies of training course certificates on file.			
Do pest management personnel seek and attend continuing education courses?	BMP	Copies of course completion certificates on file.			
<b>Staffing</b>					
Is staffing sufficient to effectively control pests and manage program?	BMP	Interview applicators, supervisors, and managers.			
If personnel indicate that staffing is insufficient, then what indicators or data are being collected to show that staffing levels are insufficient?	BMP	View indicators or data.			
<b>Pesticide Procurement</b>					
Does installation use only pesticides approved by the PMC?	M4150.07-V1: 3.2 Logistics	IPMC maintains approved pesticide list. Inspect pesticides in pest control storage and on vehicles to ensure they are listed on the current pesticide approval list. Review records.			
<b>Pest Management Records and Reporting</b>					
Are records kept for all pest management operations conducted on the installation, including those by NAFs and for agricultural operations and environmental protection?	7 U.S.C. § 136i-1(a) (1) M4150.07-V1: 4.5	Review records.			
Are records retained indefinitely?	M4150.07-V1: 3.2 Pesticides	Review records. Does IPM plan download files annually and maintain onsite?			

Review Item	Reference	Verification and Documentation	Yes	No	N/A
Do personnel and regulatory agencies have ready access to records? (e.g., able to access records by location, pesticide, applicator, etc.)	7 U.S.C. § 136i-1(b)	Review records.			
Do personnel and regulatory agencies have ready access to records? (e.g., able to access records by location, pesticide, applicator, etc.)	7 U.S.C. § 136i-1(b)	Review records.			
Are reports of pest management operations being sent to PMC?	M4150.07-V1: Para. 4.5	PMC has access to records			
<b>Contracting</b>					
Do properly trained PARs/QAEs inspect the performance of contractors?	M4150.07-V1: 4.6.d	Training certificates and contract monitoring documents are on file.			
Are all pest management contracts on the installation monitored by PARs/QAEs?	M4150.07-V1: 4.6.d	Check that MWR/MCCS an exchange contracted services are monitored by trained personnel.			
Do PARs/QAEs measure efficacy and ensure safety and environmental compliance of contract pest control?	M4150.07-V1: 4.6.d	Interview PARs/QAEs to identify method and frequency of inspections. List methods of measurement.			
Are pest management contracts sent to the PMC for review?	4150.07: 2.5.b M4150.07-V1: 4.6.b	Correspondence with PMC.			
Are all contract pesticide applicators currently licensed in the state in which they operate?	M4150.07-V1: 4.6.a.1	Copies of current certificates or licenses are on file, preferably in IPM plan.			
Is the pest control contractor currently registered with the Structural Pest Control Board or the equivalent state pest control business registration agency?	4150.07: 1.2.b	Copy of current registration certificate on file, preferably in IPM plan.			
<b>Pest Control Shop</b>					
Does pesticide storage area pose a hazard to personnel in adjacent areas or buildings?	M4150.07-V1: 4.4.a TG17:2.4	Inspect building to see that exhaust vapors will not move into adjacent occupied areas.			

Review Item	Reference	Verification and Documentation	Yes	No	N/A
Does storage area have sufficient security to prevent unauthorized entry?	M4150.07-V1: 4.4.a TG17:2.8	Conduct inspection to ensure doors can be locked, equipment storage areas can be secured, and that applicators lock doors when leaving premises.			
Does building have clean area for office?	M4150.07-V1: 4.4.a TG17: 3.1.3.1				
Are separate laundry facilities (designated only for cleaning of clothing potentially contaminated with pesticide) available for work clothing?	BMP				
Are shower facilities available for employees?	BMP				
Is separate space or cabinets provided for storage of PPE?	M4150.07-V1:4.4.a TG17: 3.1.3.1.3				
Are pesticides stored off the floor and with sufficient access so that all labels are visible?	M4150.07-V1: 4.4.a TG17: 3.1.4.1.2				
In areas where pesticide concentrates are stored or mixed, are floor drains sealed or not present and is containment provided (bermed or sloped floors)?	M4150.07-V1: 4.4.a TG17: 3.1.4.1.2 5090.1: Para.24-3.11				
Are all surfaces on which pesticides are stored and mixed and on which pesticide application equipment is serviced made of non-absorbent materials?	M4150.07-V1: 4.4.a TG17: 3.1.4.1.2				
Are pesticides stored in a dry room or building with a temperature between 50 °F and 100 °F?	M4150.07-V1: 4.4.a TG17: 3.1.4.1.2				
Are fire extinguishers provided and easily accessible to occupants?	M4150.07-V1: 4.4.a TG17: 3.1.4.1.2	Inspect inspection record and see that fire extinguishers are fully charged.			
For large pesticide containers with spigots, is a drip pan containing absorbent material placed below spigot?	M4150.07-V1: 4.4.a TG17: 3.1.4.1.2				

Review Item	Reference	Verification and Documentation	Yes	No	N/A
Are backflow prevention devices installed on faucets used to fill pesticide tanks?	M4150.07-V1: 4.4.a TG17: 3.5.2.10				
Are emergency decontamination facilities (i.e., eye wash, deluge shower) provided onsite and readily accessible?	M4150.07-V1: 4.4.a TG17: 3.5.2.12	Check to see that it is functional and that inspection records are up-to-date. Ensure that, in an emergency, personnel can easily access and operate the devices.			
Are ventilation fans available in storage and mixing areas and do they function and provide adequate ventilation (six changes of air per hour)?	M4150.07-V1: 4.4.a TG17: 3.5.4.2	Operate fans. Check IH survey ventilation results (Copy may be available in shop or contact installation IH).			
Are identification signs clearly visible on building and fences to advise personnel of the contents and warn of their hazardous nature?	M4150.07-V1: 4.4.a TG17: 3.8				
Are only pesticides listed on approved pesticide list stored?	M4150.07-V1: 3.2 Logistics	Compare approved pesticides list with items stored on shelves.			
Are pesticides handled in accordance with the product label?	M4150.07-V1: Para. 4.4.b	Labels are attached to pesticide containers. Observe storage and handling of pesticides to ensure compliance with label.			
Are spill kits provided and readily accessible?	M4150.07-V1: 4.4.a TG17: 2.3.4 and 4.5.1	Inspect to ensure contents are suitable for pesticide spills.			
Are SDSs and labels for each pesticide stored and used maintained and readily accessible in the pest control shop?	M4150.07-V1: Para. 4.4.b	Review SDS/label book and compare with pesticides stored in shop and on vehicles.			
Are pesticides and fertilizers adequately segregated?	M4150.07-V1: 4.4.a TG17: 5.2.3	Inspect			
<b>Pest Control Equipment</b>					
Is equipment properly maintained and clean (no evidence of leakage and spillage)?	BMP	Inspect			
Are different sprayers used for herbicides and insecticides?	BMP	Inspect that sprayers are properly marked.			

<b>Review Item</b>	<b>Reference</b>	<b>Verification and Documentation</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
Is equipment routinely calibrated to ensure proper delivery of pesticide?	BMP	Calibrations, if needed, are recorded in a logbook or other recordkeeping system.			
Is application equipment stored in a secure area?	M4150.07-V1: 4.4.a TG17: 3.4.6	Inspect			
<b>Pest Control Vehicles (DoD and Contract)</b>					
Are pesticides stored in a lockable compartment on the vehicle?	BMP	Inspect			
Does applicator ensure that pesticides are not stored in passenger compartment of vehicle?	BMP	Inspect			
Is the vehicle clean and maintained (no evidence of leakage and spillage)?	BMP	Inspect			
Does the vehicle have a properly stocked spill kit?	BMP	Inspect to ensure contents are suitable for pesticide spills.			
Is the vehicle properly identified to warn of pesticides on vehicle?	BMP	Inspect			
Are all containers on vehicle, including service containers, properly labeled?	M4150.07-V1: Para. 4.4.b	Inspect			
Is PPE properly stored on vehicle?	BMP	Inspect			
Are labels and SDSs for pesticides carried on vehicle?	BMP	Inspect			
Are appropriate wash racks provided for cleaning vehicles (i.e., does not drain into stormwater system)?	BMP	Inspect			
<b>Integrated Pest Management</b>					
Is integrated pest management practiced in order to minimize pesticide use when non-chemical alternatives are available and cost effective?	7 U.S.C. § 136r-1 4150.07: 1.2.a	Pest management service providers have survey devices (i.e., sticky traps) and less toxic and sustainable pesticides (i.e., baits) in their inventory. Records include surveys and the application of less toxic pesticides and use of non-chemical methods.			

Review Item	Reference	Verification and Documentation	Yes	No	N/A
Does the installation pest management plan emphasize and describe the use of IPM to provide sustainable pest management?	7 U.S.C. § 136r-1 4150.07: Section 4 M4150.07-V1: 3.1	Review IPM plan sections that list pest control methods. Review installation instructions, orders, or policies, especially for housing, that encourage IPM practices.			
Does the installation use practices that demonstrate IPM?	7 U.S.C. § 136r-1 4150.07: 1.2.a	Identify and list practices.			
Does the installation promote IPM	7 U.S.C. § 136r-1 4150.07: 1.2.a	Identify and list promotion practices.			
<b>Pesticide Application</b>					
Are pesticides applied in accordance with the label directions?	7 U.S.C. § 136(j) M4150.07-V1: 4.4.b	Interview applicators. Observe application if possible. Wear appropriate PPE.			
Are special precautions taken for operations at child development centers, housing, medical treatment facilities, and food preparation areas?	M4150.07-V1: 3.4	Interview applicators and review records to see if steps are taken to minimize pesticide use or use less toxic pesticides in these areas.			
Are liquid and dust formulations of pesticides applied only when unprotected personnel are not occupying the work space to be treated?	BMP	Interview applicators. Observe application if possible. Wear appropriate PPE.			
Are preventive pesticide treatments prohibited unless approved by a pest management consultant?	M4150.07-V1: 6.3	Interview applicators regarding practices. Review pest management records to see if there is any indication of routine pesticide applications.			
Are all applicators familiar with the installation's spill response procedures?	BMP	Get copy of installation instruction on spill response procedures. Interview applicators.			
Are all feasible efforts and management controls used to avoid production of hazardous wastes and to ensure use of pesticides before shelf-life expiration?	BMP	Ask applicators how they clean equipment and dispose of rinsate. Interview shop supervisor to determine container disposal methods.			

Review Item	Reference	Verification and Documentation	Yes	No	N/A
Is the installation aware of and do they enforce pesticide "stop sale, use, or removal" orders issued by the EPA?	FIFRA	Check EPA Web site regarding the provisions of pesticide orders. Check records to see if pesticides that have a "stop sale, use, or removal" order are being used contrary to the provisions of the order.			
<b>Aerial Pesticide Applications</b>					
If conducted or proposed, has a plan for the aerial application of pesticides been reviewed and approved by an aerial spray-certified PMC?	M4150.07-V1: 5.1.b	Ask for and review signed validation statement.			
<b>Safety</b>					
Are applicators provided with the appropriate PPE?	M4150.07-V1: 3.2, Table 1 and 4.4.b	Ask applicators to show you PPE in shop and on vehicles.			
Do applicators maintain and wear appropriate PPE when applying pesticides?	M4150.07-V1: 4.4.b	Ask applicators to show you PPE in shop and on vehicles. Observe application, if possible.			
Do all applicators receive training on use of PPE? Are applicators physically qualified to wear respirators?	M4150.07-V1: 4.4.b M4150.07-V2: APP 5A.g	Review training record or rosters. Ask to see respirator fit test cards.			
<b>Medical</b>					
Are all preventive medicine technicians currently DoD certified to apply pesticides?	M4150.07-V1: 3.2, Table 1	IPMC should maintain and update their certification information in the IPM plan.			
Does the preventive medicine department (PMD) provide guidance, recommendations and on-site assistance on technical matters related to disease vectors and other medically-important pests?	M4150.07-V1: 3.2, Table 1	Reports			
Has PMD developed and maintains an emergency disease vector control plan?	M4150.07-V1: 3.2, Table 1	Copy of plan should be included in the IPM plan			
Is PMD prepared to provide area-wide operational pest management services in the event of a vector-borne disease outbreak or elevated risk of disease?	M4150.07-V1: 3.2, Table 1	Details should be provided in the emergency disease vector control plan and PMD should be familiar with it.			

Review Item	Reference	Verification and Documentation	Yes	No	N/A
Does PMD provide guidance on the use of PPE to pesticide applicators and medical surveillance program managers?	M4150.07-V1: 3.2, Table 1	Only applies when the installation has a DoD pest control shop and applicators.			
Does PMD conduct inspection and surveys to determine species, source, and location of medically-important pests?	M4150.07-V1: 3.2, Table 1	Reports and survey data.			
Does PMD evaluate the effectiveness of control measures, communicate surveillance data to pesticide applicators, and coordinate with civilian and government agencies on disease vector issues?	M4150.07-V1: 3.2, Table 1	Surveys should be conducted to evaluate efficacy of control and survey data maintained. PMD should have a list of agencies in the emergency disease vector control plan.			
<b>NAF Operations</b>					
Are all NAF pest management operations described in the IPM plan? This includes operations conducted at: • Exchange retail stores • Exchange and MWR/MCCS food service facilities • NAF athletic fields and golf courses	M4150.07-V1: 3.3.c, d, and h	Review IPM plan.			
Are pesticides used by NAFI pest control providers included on the installation approved pesticide list?	M4150.07-V1: 3.3.e	Pesticides used by NAFs are included on pesticide approval list.			
Are pesticide use records maintained at each facility?	7 U.S.C. § 136i-1(a) (1)	NAF maintains records.			
Are all pest management operations reported to the installation IPMC so that it can be reported to the PMC?	M4150.07-V1: 4.5	Records and reports contain operations conducted by NAFs			
If NAFs purchase pesticides or pest control services with the government purchase card, are the services in compliance with DoD pest management requirements?	M4150.07-V1: 4.6.c	Identify pest management services that may have been purchased with a purchase card, i.e. one time pest control service in a club.			
<b>Pesticide Retail Sales in the Exchange, Commissary, and Veterinary Clinics</b>					

<b>Review Item</b>	<b>Reference</b>	<b>Verification and Documentation</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
Are only pesticides that are not Category I pesticides labeled "Danger, Poison" displayed for retail sale?	BMP	Inspect pesticide display.			
Are pesticides properly displayed to prevent contamination of food, equipment, utensils, linens, and single-service and single-use articles? (i.e., separated by partition or located in an area not above items)	FOOD: 7-301.11 TG 45	Inspect pesticide display.			
Are spill containment items available?	BMP TG 45	Inspect spill containment kits.			
Are employees familiar with spill procedures?	M4150.07-V1: 4.4.b TG 45	Ask employees to describe procedures.			
Does PH/PM assist exchange and commissary in selecting, storing, and displaying pesticides in retail outlets?	FOOD: 7-301.11	Interview preventive medicine personnel.			
Is the retail store aware of and do they enforce pesticide "stop sale, use, or removal" orders issued by the EPA?	FIFRA	Check EPA Web site regarding the provisions of pesticide orders. Check retail shelves to see if pesticides that have a "stop sale, use, or removal" order are being displayed for sale contrary to the provisions of the order.			
<b>Environmental Programs</b>					
Does the installation have a noxious weed management program developed in accordance with Section 2814 of Title 7, U.S.C. to comply with the Federal Noxious Weed Act and is conducted in cooperation with State and local agencies?	M4150.07-V1: 5.5	Review any plans (INRMP, invasive weed management plan) or contracts for noxious weed control. Specific control/prevention measures are listed in IPM plan			
If the installation has an active airfield, does the IPMP reference the BASH plan?	M4150.07-V1: 3.1	Plans, directives, or contracts for BASH or references should be included in the IPM plan. A list of specific control/prevention measures should be in IPMP.			

Review Item	Reference	Verification and Documentation	Yes	No	N/A
Does the IPM plan reference the INRMP? Are appropriate portions of the IPM plan implemented in accordance with the INRMP?	M4150.07-V1: 5.10	Review IPM plan. Copy or link to INRMP should be included in IPMP.			
Are pesticides used in invasive weed control, BASH, depredation and other environmental programs included in the installation approved pesticide list?	M4150.07-V1: 3.3.e	Review pest management records or plans.			
Are pesticides used in these operations recorded and reported to the IPMC so that they can be reported to the PMC?	7 U.S.C. § 136i-1(a) (1) M4150.07-V1: 4.5	Review pest management records.			
Have pest management operations that may have an impact on natural resources been coordinated with and reviewed by the natural resources program manager?	M4150.07-V1: 5.10 (2) and (4)	Review IPM plan for environmental impacts of pest management operations and for environmental manager signature. Interview natural resources manager to ensure if he/she is aware of pest management impacts on natural resources.			
If feral cats and dogs are present or potentially present, does the installation have a program to capture and remove them from the installation?	BMP	Visual observations. Review installation policies or directives. Identify and review procedures.			
<b>Agricultural Outlease Program</b>					
Does the IPM plan describe the agricultural outlease pest management program?	M4150.07-V1: 3.3.h	Review IPM plan.			
Has agricultural outlease agreement (including soil and water conservation plan) been reviewed by the PMC	M4150.07-V1: 4.6.b .e	Record of review.			
Are agricultural pesticides included on the installation list of approved pesticides?	M4150.07-V1: 3.2 Logistics	Review records.			
Are the pest management operations reported to the installation IPMC reported to the PMC?	7 U.S.C. § 136i-1(a) (1) M4150.07-V1: 4.5	Review records			

Review Item	Reference	Verification and Documentation	Yes	No	N/A
Is on-base agricultural pesticide storage in compliance with local and State regulations?	M4150.07-V1: 4.4.a	Obtain State regulations and inspect pesticide storage or review agricultural commissioner inspection records.			
If lessee(s) use aerial pesticide application, has the aerial spray project been reviewed and approved by PMC?	M4150.07-V1: 5.1	Review aerial spray statement of need and validation letter.			
<b>Pest Management Operations</b>					
What are the installation's top five pests and what are their impacts on the installation mission?	BMP	Interview pest management service providers and complete pest management project sheets for each pest.			
What survey methods are used to detect, assess, and prescribe treatment for the top five pests?	BMP	Interview pest management service providers and complete pest management project sheets for each pest.			
What non-chemical control methods are used to prevent and control the top five pests?	BMP	Interview pest management service providers and complete pest management project sheets for each pest.			
Exclusion: Facilities are adequately pest-proofed?	BMP	Inspect			
Sanitation: Facilities are adequately cleaned and trash removed to discourage pest activity?	BMP	Inspect			
Harborage: Cracks and crevices are adequately sealed to limit pest harborage opportunities?	BMP	Inspect			
<p>Key to references:</p> <ul style="list-style-type: none"> <li>• 7 U.S.C. § 136 FIFRA</li> <li>• 4150.07: <a href="#">DoDI 4150.07</a>, DoD Pest Management Program</li> <li>• M4150.07- V1: <a href="#">DoD Manual 4150.07, Volume 1</a>, DoD Pest Management Program Elements and Implementation: Structure and Operation</li> <li>• M4150.07- V2: <a href="#">DoD Manual 4150.07, Volume 2</a>, DoD Pest Management Program Elements and Implementation: Pesticide Applicator Training and Certification Program</li> <li>• BMP: Best management practice. These review items are either required by some Service directives or are pest management industry standards or best practices.</li> <li>• TG17: Armed Forces Pest Management Board, Technical Guide No. 17 Military Handbook, Design of Pest Management Facilities</li> <li>• FOOD: U.S. Food Code 2017</li> </ul>					

## A-5. Fact Sheet: Common Pest Management Program Issues Checklist

# A Quick Guide to Avoiding Common Pest Management Program Deficiencies

### General

- Integrated pest management plan (IPMP) is signed and implemented by installation commander / commanding officer (CO), annually updated, and rewritten every 5 years
- IPM coordinator (IPMC) has attended required pest management training/recertification
- IPMC is designated in writing by installation CO

### Contracts

- The pest management/grounds maintenance contract performance assessment representative (PAR) has attended required pest management training/recertification
- Contracts that involve pesticide\* use are sent to NAVFAC Applied Biology for review prior to procurement

\*Pesticides include insecticides, herbicides, rodenticides, fungicides, etc.

### Operations

- Pest management service providers (PMSPs) are properly certified\*
- PMSPs are reporting all pest management operations at least monthly
- All pesticides are reviewed and approved by NAVFAC Applied Biology
- Pesticides are handled and applied in accordance with the product's label
- Personal protective equipment is available and used appropriately

\*Some states allow technicians who are not fully-certified to apply pesticides under supervision, but this is not allowed on DoD installations

### Facilities

- Gaps underneath or between doors are sealed
- Maintain good sanitation
- Pest harborage (e.g., cracks and crevices) is limited

### Pesticide Storage/Mixing

- All pest control shops conform to the fullest extent practical with the pest management facility design criteria in Armed Forces Pest Management Board Technical Guide (AFPMB TG) 17
- Contractors are not storing/mixing pesticides on the installation unless facilities are adequate to do so and authorized by the contract
- Emergency shower and eyewash are sufficient
- A spill kit is available at the facility and on the pest control vehicle
- Retail operations do not sell Category 1 (Hint: these are labeled "Danger") pesticide products

### Liaison Checklist

- Environmental
- Public Works
- Preventive Medicine/Public Health
- Exchange
- MWR
- DeCA
- Other

### References

DoDI 4150.07  
DoDM 4150.07, Vol 1 & 2  
AFPMB TG 17

## A-6. Emergency Vector-borne Disease Response Plan Template

### Emergency Vector-borne Disease Response Plan Template

DoDM 4150.07, Volume 1 requires the Medical Treatment Facility / Medical Group Public Health / Preventive Medicine Department to develop an installation emergency disease vector control or response plan. This document provides a template for developing this plan. The plan requires that the personnel writing it be familiar with vector-borne or zoonotic diseases and risks on the installation. Additionally, it requires coordination with installation stakeholders and familiarity with the vector control capabilities of the pest management service providers (PMSP). It also requires liaison with local vector control and public health agencies.

Use the template as a guide and tailor the plan to fit the installation. All departments and stakeholders in the plan should be involved in writing the plan to ensure that they are familiar with their responsibilities in the event of an emergency. The MAJCOM Public Health Center and MAJCOM pest management consultants can provide assistance in preparing the plan. Upon completion of the plan, a table-top exercise should be conducted and the plan modified as needed. Include the response plan in the installation IPM plan.

**EMERGENCY VECTOR-BORNE DISEASE RESPONSE PLAN FOR  
[Installation and Location]**

**MONTH YYYY**

Ref:

- (a) DoDI 6200.03: Public Health Emergency Management within the DoD
- (b) DoDI 4150.07: DoD Pest Management Program
- (c) DoDM 4150.07, Volume 1, DoD Pest Management Program Elements and Implementation: Structure And Operation
- (d) DoDM 4150.07, Volume 2, DoD Pest Management Program Elements and Implementation: Pesticide Applicator Training and Certification Program
- (e) DoDD 5136.13: Defense Health Agency (DHA)
- (f) DHA Procedural Instruction 3700.01: Director's Critical Information Requirements (DCIR), Situation Report (SITREP)
- (g) AFMAN 32-1053: Integrated Pest Management Program
- (h) [Add applicable Service instructions]

Encl:

- (1) Points of Contact for Emergency Vector Control Planning
- (2) Locations of Concern during a vector emergency
- (3) Equipment available for Emergency Vector Control
- (4) Vector-borne Diseases found at [Location]
- (5) Vector-borne Disease Risk/Response Matrix
- (6) Suggested Disease Indicator or Case Responses for Mosquito-borne Encephalitis
- (7) Suggested Disease Indicator or Case Responses for Rabies
- (8) Suggested Vector Management Responses in the Event of a Disaster

**1. Authority**

This plan is established in accordance with references (a) and (b) and as implemented in references (c) and (d).

**2. Purpose**

To provide an actionable framework to manage potential vectors and disease hosts to prevent vector-borne and/or zoonotic disease in response to a natural or man-made disaster, disease outbreak, or other emergency at [Installation Name, State]. This plan will be accomplished by implementing Integrated Pest Management (IPM) techniques in a manner that minimizes occupational exposure, protects public health and the environment, and ensures compliance with appropriate

Federal, State, Local, [International], DoD, and Service policies and procedures.

### **3. Applicability**

This plan applies to emergencies involving outbreaks or conditions that increase the risk of vector-borne and zoonotic disease transmission to the human population on a permanent or temporary DoD installation or in the surrounding community.

### **4. Responsibility**

a. Medical Treatment Facility (MTF)/Medical Group (MEDGRP) Public Health / Preventive Medicine (PH/PM) Section / Department

(1) Implement, coordinate, exercise and update this plan.

(2) Provide management support, resources, and properly trained PH/PM staff, delegated with the responsibility and authority to manage all vector-borne and zoonotic disease surveillance and risk assessment and management.

(3) Conduct vector surveillance to assess vector-borne and zoonotic disease risk and communicate risks and management recommendations to the IPMC, PMSPs, installation commander and stakeholders.

(4) Coordinate the collection, sorting, and shipment of all disease vector specimens to Army Public Health Center (APHC), Navy Entomology Center of Excellence (NECE), US Air Force School of Medicine (USAFSAM) for vector-borne disease testing and analysis.

(5) Notify and advise the MTF/MEDGRP Director, installation commander, IPMC, and applicable stakeholders [e.g., public affairs, local civilian health department, housing office, etc.], whenever vector-borne disease testing and analysis reveals positive results.

(6) In coordination with the IPMC, pest control supervisors, and contract performance assessment representatives / quality assurance evaluators (PAR/QAE), ensure that PMSPs have the capability (i.e. training, equipment, pesticides) to control disease vectors / hosts.

(7) Provide awareness and education to all installation personnel on preventing vectors / hosts and vector-borne and zoonotic disease.

(8) In the event of an emergency, implement this plan in coordination with the IPMC.

(9) Monitor the achievement of disease vector surveillance and control objectives

established by this plan during a VBD emergency.

(10) Ensure that all disease vector surveillance and control operations are conducted safely with minimal impact on human health and the environment and in compliance with federal and state regulations and DoD policy.

(11) Coordinate this plan with the installation Public Health Emergency Officer (PHEO).

b. Integrated Pest Management Coordinator

(1) Ensure that this plan is included in the installation IPM Plan and communicated to all PMSPs and stakeholders.

(2) Assist PH/PM department with planning and exercising this plan with installation PMSPs and stakeholders.

(3) Ensure compliance of all vector/host management operations with applicable regulations and policies.

(4) Coordinate with PH/PM and PMSPs to determine the need for external support (i.e. vector control district, aerial spray) and to submit request.

c. Contracting Officer / Contract Writer

(1) Consult with PH/PM department and IPMC when preparing pest or vector control contracts to ensure specifications include required emergency vector / host control capabilities.

d. Pest Management Service Providers

Pest management service providers (PMSP) include DoD or contracted pesticide applicators that can conduct vector or pest control to prevent or control the transmission of vector-borne or zoonotic diseases. PMSPs may also include wildlife conflict managers such as Conservation Law Enforcement Officers (CLEO) that may trap or capture wildlife that may be involved in disease transmission.

(1) Ensure that all pesticides used in vector control operations are on the Armed Forces Pest Management Board (AFPMB) DoD-approved list or approved for non-routine use by the MAJCOM Pest Management Consultant.

(2) Ensure all pest control applicators that perform vector control operations possess a current state pesticide applicator license and are certified in public health /

medically important pest category.

(3) Ensure that vector control equipment is maintained, calibrated and ready for use in an emergency.

(4) Ensure that all vector control operations are performed in accordance with all applicable Federal, State, DoD, local laws, and regulations. Public agency vector control or mosquito control districts may have exemptions under state or local regulations during public health emergencies.

(5) Submit vector control service records within 24 hours of any treatment to the IPMC and PH/PM department.

e. MTF/MEDGRP Director

(1) Support the disease response as designated in the IPMP

(2) Submit DCIR(s) and SITREPs to higher installation leadership and to higher DHA market or intermediate organization headquarters as needed.

(3) Provide appropriate entomological and health risk communication as necessary.

## 5. Installation Information

[Depending on your locality, this section will include demographic, geographic, environmental, ecological, meteorological, and zoonotic descriptions of the local area. The intention here is to set the background for subsequent actions on responding to disease vectors during outbreaks or emergencies relative to your area of responsibility (AOR). The IPMP may be referenced if this information is included in that plan. Relevant information should include:

- a. Areas of responsibility for the EVDRP
- b. Vectors and diseases of concern on the installation
- c. Installation areas and populations at risk for disease transmission
- d. Basic climate and environmental information.]

## 6. Planning

Reference (a) defines a public health emergency to include the occurrence or imminent threat of an illness or health condition that poses a high probability of: “a significant number of deaths; a significant number of serious or long-term disabilities; widespread exposure to an infectious or toxic agent that poses a significant risk of substantial

future harm; health care needs that exceed available resources; or severe degradation of mission capabilities or normal operations.” Consistent with this definition a vector-borne disease emergency may be indicated by one or a combination of the following:

**a. Outbreak of Human Disease.** A single diagnosed human case of vector-borne or zoonotic disease may be sufficient to be designated as an outbreak. Patient travel history is the primary means for determining where the disease was acquired. If the disease appears to be locally acquired, depending on the disease, a vector risk investigation and assessment at the patient’s residence, place of employment, or other frequented area should be conducted. At [Installation Name], this should be done by the PH/PM department. Outside of the installation, the assessment should be conducted by the [local public health agency] with cooperation of PH/PM department. An emergency situation may exist when it appears that the human case was from local transmission and it occurred on the installation.

**b. Infected Animal Hosts.** Animal hosts infected with zoonotic diseases transmissible to humans are usually detected post-mortem after the sudden death of a domestic, captive, or wild animal. Other cases are found by lab diagnosis of a severely ill captive or domestic animal. An emergency situation may occur when investigations indicate that the host is in high density and close proximity to susceptible human hosts to increase the risk of transmission. A situation may also occur when the host is exposed to a large number of vectors that may increase the risk of biting for susceptible humans.

**c. Arthropod Vectors of Infectious Diseases.** Infectious vectors are detected through the collection, identification, and testing of potential arthropod vectors. An emergency is dependent on the vector of concern. [In this section, edit to fit the disease vectors at your installation locality. Mosquitoes may initiate an emergency response due to their mobility and wide distribution. Ticks, mites, sand flies, and fleas may also pose a threat that would initiate an emergency response]. An emergency may exist when infectious vectors are found in high densities and in close proximity to susceptible humans, or when pathogen infection rates of vectors exceed established surveillance thresholds.

**d. Increased Abundance of Filth Flies.** A rapid increase in the number of filth flies (houseflies, blow flies, flesh flies, etc.) after a natural or manmade disaster may pose an increased risk of disease transmission. Outbreaks of filth flies usually accompany a breakdown of sanitation infrastructure and services following a disaster. Enteric diseases can be transmitted and distributed through flies because of exposure to contaminated food and water from damage to the infrastructure, and the accompanying lack of hygiene.

## 7. POTENTIAL VECTORS AND DISEASES.

Based on vector surveillance data, the following vectors and/or hosts, and the diseases they carry may occur on the installation [edit this section to fit the diseases, disease vectors, and reservoir populations at your installation locality]:

### a. Mosquitoes.

**(1) West Nile Virus (WNV).** A viral disease transmitted to humans by multiple *Culex* mosquito species. About 80% of infected people see no symptoms. Symptoms include debilitating joint and muscle pain, headache, nausea, fatigue and rash. The disease is rarely lethal. There is no vaccine or drug for the virus. Treatment focuses on relieving symptoms. Disease is found globally, in the United States it is most abundant in the southern states and along the Mississippi river.

**(2) Japanese Encephalitis Virus (JEV).** A viral disease transmitted to humans by multiple mosquito species. Symptoms include debilitating joint and muscle pain, headache, nausea, fatigue and rash. The disease is rarely lethal. There is no vaccine or drug for the virus. Treatment focuses on relieving symptoms. Disease mostly occurs in Africa, Asia and the Indian subcontinent although outbreaks have occurred in south and Central America.

**(3) Chikungunya Virus (CHKV).** A viral disease transmitted to humans by *Aedes aegypti* mosquitoes. Symptoms include debilitating joint and muscle pain, headache, nausea, fatigue and rash. The disease is rarely lethal. There is no vaccine or drug for the virus. Treatment focuses on relieving symptoms. Disease mostly occurs in Africa, Asia and the Indian subcontinent although outbreaks have occurred in south and Central America.

**(4) Dengue Virus (DENV).** A viral disease transmitted to humans by *Aedes aegypti* mosquitoes. There are four serotypes of the disease so an individual can be infected up to four times. Primarily flu-like symptoms but without treatment the disease can develop into severe dengue which can be lethal. There is a new vaccine for the disease but it is rarely in use due to limitations. Treatment focuses on relieving symptoms. Is common in urban and semi-urban areas in all tropical and sub-tropical climates. There are an estimated 100-400 million infections each year.

**(5) Yellow Fever Virus (YFV).** A viral hemorrhagic disease transmitted to humans by *Aedes aegypti* mosquitoes. Symptoms include jaundice, muscle pain, headache, nausea, fatigue and fever. A small portion of those infected develop severe symptoms and the disease is lethal for about half of those individual. There is an effective and inexpensive vaccine for this disease. Disease is endemic in tropical regions of Africa, Central and South America.

**(6) Zika Virus (ZIKV).** A viral disease transmitted to humans by *Aedes aegypti* mosquitoes. Mild flu-like symptoms. The disease is rarely lethal. Infection can be transmitted from mother to fetus during pregnancy, through sexual contact and blood transfusion. The disease has been associated with microcephaly in infants. There is no vaccine or drug for the virus. Treatment focuses on relieving symptoms. Disease is found in tropical and sub-tropical regions world-wide.

**(7) Malaria.** A parasitic infection transmitted to humans through Anopheles mosquitoes. Most infections have flu-like symptoms such as fever, chills, sweats, headache, nausea and vomiting, body aches, and general malaise. Severe malaria tends to develop in children under 5, this accounts for 95% of malaria deaths. The disease is preventable with prophylaxis and curable. It is found in certain areas of South America, Africa, and Asia.

**(8) Rift Valley Fever Virus (RVFV).** Viral disease transmitted to humans by female mosquitoes or exposure to bodily fluids or tissue of infected animals. Most people infected have no symptoms or mild illness. About 10% of people infected develop severe symptoms including eye lesions, inflammation of the brain, and hemorrhagic fever. Fatality is extremely high for those that develop severe RVFV. Disease is endemic in Africa and the southern portions of the Middle East. There are reports that this disease is rapidly expanding its territory.

#### **b. Ticks.**

**(1) Lyme Disease.** Lyme disease is a serious, debilitating, and potentially fatal disease carried by the deer tick or black-legged tick (*Ixodes scapularis*) in the northwest and upper Midwest regions of the U.S. Human cases number in the tens of thousands per year. The infection is caused by rickettsial bacteria that are typically acquired by the tick while feeding on rodents or deer. Potential emergency response actions include: increased surveillance for ticks, exclusion of deer from areas frequented by humans, habitat modification to remove tick harborage (removal of brush, grass kept short), treating deer with pesticides using four post feeders or other methods, area wide use of rodenticide baits, barrier sprays of vegetation near inhabited areas, implementing personal protective measures including distribution of repellents, and education of the public on tick-bite avoidance and the symptoms of Lyme disease.

**(2) Tick-borne Encephalitis (TBE).** TBE is a viral disease spread by the castor bean tick (*Ixodes ricinus*) *I. persulcatus* and *Dermacentor reticulatus* in Europe and Asia. The disease affects the central nervous system and symptoms include fever, achiness, and loss of appetite, headache, nausea, and vomiting. For personnel

working in high risk positions, a vaccine is available in Europe.

**(3) Rocky Mountain Spotted Fever (RMSF).** RMSF is a serious and potentially fatal disease caused by rickettsial bacteria. It is spread by the bite of infected ticks, primarily the American dog tick (*Dermacentor variabilis*) and the wood tick (*Dermacentor andersoni*). It is most frequently seen in the southeastern U.S. Symptoms include a fever, headache, rash, muscle and stomach pain, and nausea. Prompt treatment with antibiotics (doxycycline) is effective preventing severe illness and death.

**(4) Red Meat Allergies.** Allergies to red meat and products from mammals, also known as alpha-gal syndrome, can arise following tick bites. The syndrome is caused by the exposure to a carbohydrate (alpha-galactose) in tick saliva, which is also found in animal products. Most cases are found in the southeastern U.S. following bites from the lone star tick (*A. americanum*), but the syndrome has also been found in Europe, Australia, and Asia where it is caused by other tick species. There is no treatment other than avoiding meat and products from mammals.

**(5) Crimean-Congo Hemorrhagic Fever (CCHF).** Severe viral hemorrhagic fever with a 40% fatality rate. Transmitted to humans from ticks and livestock animals. Human-to-Human transmission can occur through close contact with blood, secretions, organs or other bodily fluids of infected persons. Endemic in Africa, Balkans, Middle East, Asia.

### c. Sand Flies.

**(1) Visceral Leishmaniasis (VL).** A parasitic infection transmitted to humans by infected sand fly bites. Symptoms include irregular bouts of fever, weight loss, enlargement of the spleen and liver, and anemia. If left untreated it has a 95% fatality. Remains one of the top parasitic diseases with outbreak and mortality potential. 90% of cases have been reported in Brazil, China, Ethiopia, Eritrea, India, Kenya, Somalia, South Sudan, Sudan and Yemen.

**(2) Cutaneous Leishmaniasis (CL).** Most common form of leishmaniasis. Symptoms include skin lesions and ulcers that can lead to disfigurement and disability. 85% of cases occur in Afghanistan, Algeria, Brazil, Colombia, Iraq, Libya, Pakistan, Peru, and Syrian Arab Republic, and Tunisia.

**(3) Mucocutaneous Leishmaniasis.** Infection that leads to the partial or total destruction of mucous membranes in the nose, mouth and through, leading to severe disfigurement and death. 90% of cases occur in Bolivia, Brazil, Ethiopia, and Peru.

#### **d. Mammals.**

**(1) Leptospirosis.** Bacterial disease spread through water contaminated with mammal urine. Humans that are exposed to contaminated water or animal nests and burrows are at highest risk of infection. Risk of infection increases after natural disasters and flooding due to the higher levels of contaminated water. Symptoms can be flu-like or result in organ failure and death.

**(2) Rabies.** Rabies is a human viral disease that is carried by wild animals, particularly canids (dogs), felids (cats), raccoons, and bats. Symptoms are progressive and if left untreated is near 100% fatal. Those potentially exposed need to receive immediate treatment for the disease. The disease is rare but found all around the world. Disease is most common in rural areas with large feral animal populations.

#### **e. Rodents.**

**(1) Plague.** Bacterial disease spread to people by fleas that live on rodents. Symptoms develop after one to seven days. There is a 30-60% fatality rate for cases that are not treated with Antibiotics. In recent years the most endemic countries are Democratic Republic of Congo, Madagascar, and Peru.

**(2) Leptospirosis** (see Mammals).

#### **f. Filth Flies.**

**(1) Food-borne Gastrointestinal Diseases.** Filth flies are ubiquitous after most natural disasters and are potential carriers of bacteria and other microorganisms that can contaminate food and cause gastrointestinal illness.

#### **g. Fleas.**

**(1) Plague** (see Rodents).

#### **h. Triatomine Bugs.**

**(1) Chagas Disease (American trypanosomiasis).** Parasitic infections spread by kissing bugs. Infection can lead to alterations in the heart, brain, and digestive systems. Disease can be spread by disease vector or by exposure to infected persons blood. Most common in south and Central America.

## i. Tsetse Flies.

**(1) Sleeping Sickness (African trypanosomiasis).** Parasitic disease spread to humans through tsetse fly bites. The disease impacts livestock and humans in rural parts of central Africa. Disease eventually infects the brain causing madness and death.

## 8. POTENTIAL DISASTERS AND EMERGENCIES

[In this section, anticipated disasters (natural or otherwise) or emergencies should be edited to fit your installation locality.]

**a. Flooding.** Flooding due to heavy rains may occur. Mosquito breeding may begin several days to a week after floodwaters have receded.

**b. Storms/Hurricanes.** Tropical depressions, storms and hurricanes occur in [location]. Heavy rain may cause flooding and the production of mosquito breeding sites. Flooding may also prevent access by pest controllers to breeding areas for treatment. Winds may cause structural damage resulting in the disruption of sanitation services. Consequently, filth fly, rodent, and cockroach populations may expand. Organic debris, generated from a storm, may provide excellent breeding sites for flies and *Culicoides* (no-see-ums).

**c. Wildfires.** Wildfires are a relatively [frequent or infrequent] occurrence near the [installation]. The main public health concern is the breakdown of infrastructure. Evacuation of homes may require establishment of temporary shelters under primitive conditions. Fires may also drive wildlife into urban and suburban areas.

**d. Earthquakes.** Earthquakes may damage buildings and critical infrastructure, and may limit access to clean water and electrical power and causing conditions leading to outbreaks of disease.

**e. Disease Outbreaks.** A disease outbreak first identified in a local medical treatment facility and be reported to the local public health agencies. A disease alert will be sent out to the community and appropriate control measures will be initiated.

## 9. Emergency Vector Management Measures

[Edit this section to fit the capabilities and measures taken at your installation locality.] When disease is present or imminent, immediate control and reduction of the animals that carry the disease are necessary. Additionally, installations should increase communication on awareness, risk and preventive measures. The following

control measures are necessary depending on the disease:

Vector	Disaster or Emergency	Response
Mosquito	Disease Outbreak Flooding Storms and Hurricanes Earthquake	Area-wide insecticide spraying with a vehicle-mounted mist generator (fogger, ULV) or aerial spray, if necessary. Indoor residual spraying in locations of concern. Habitat removal around locations of concern. Using larvicides in aquatic mosquito breeding habitats.
Ticks	Disease Outbreak	Habitat modification around occupied areas to remove harborage for ticks. Application of residual acaricides to wildlife or thick vegetation bordering trails, camps, etc.
Sand Flies	Disease Outbreak Storms and Hurricanes	Rodent reduction using traps and/or rodenticides. Removal of rodent burrows and exclusion from access to structures. Indoor residual spraying in locations of concern
Mammals	Disease Outbreak Storms and Hurricanes Earthquakes	Implement sanitation and exclusion practices to keep mammals away from garbage and refuse. Reduce rodent populations using traps and/or rodenticides.
Rodents	Disease Outbreak Flooding Storms and Hurricanes Earthquake	Rodent reduction using traps and/or rodenticides. Removal of rodent burrows and exclusion from access to structures. Implement sanitation and exclusion practices to keep rats away from garbage and refuse.

Filth Flies	Disease Outbreak Flooding Storms and Hurricanes Earthquake Wildfires	Area-wide insecticide spraying with a vehicle-mounted mist generator (fogger, ULV). Indoor residual spraying in locations of concern. Habitat removal around locations of concern. Implement sanitation and exclusion practices to create distance between refuse disposal areas and human populations.
Fleas	Disease Outbreak	See Rodents and Mammals.
Triatomine Bugs	Disease Outbreak	Indoor residual spraying in areas of concern
Tsetse Flies	Disease Outbreak	Limit movement of livestock near human settlement.

## 10. Resources

**a. Human Disease Surveillance.** The MTF/MEDGRP PH/PM department maintains in-house disease surveillance capabilities by individuals specializing in epidemiology, infectious disease, and environmental health. This allows for the first line of detection for infectious diseases of military or Government employees. The Branch Health Clinic can also link to civilian medical treatment facilities. Additional epidemiological support is available through the PH/PM department.

**b. Vector-borne and Zoonotic Disease Surveillance.** The MTF/MEDGRP PH/PM department has the capability and expertise to perform routine surveillance of vector-borne diseases to monitor vector and reservoir populations at [installation]. APHC, Cognizant NEPMU's, NECE, and USAFSAM have extensive surveillance and laboratory reach back capabilities, and can be requested to conduct vector-borne and zoonotic disease risk assessments

**c. Vector Control.** Either DoD-certified or contracted state-certified pesticide applicators may perform vector control services. The installation IPMC and/or the contract PAR/QAE will oversee these activities [Modify to meet local pest management processes]. The PMSP has the equipment, pesticides, and personnel to conduct emergency vector control operations. The PH/PM department coordinates public health efforts in emergencies. Additional vector control support, including personnel, technical expertise, pest control equipment, and pesticides, is available from [name additional resources or support here]. [Local government health agencies]

are also available to respond to health threats that affect the entire community.

## 11. Action

### a. Pre-Emergency Preparations

(1) Medical and pest management personnel should be familiar with vector-borne and zoonotic disease risk in the local area.

(2) MTF/MEDGRP PH/PM personnel should have conducted regular disease vector / host surveillance and risk assessment on the installation.

(3) MTF/MEDGRP PH/PM personnel should identify areas within the area of responsibility that can be potential hotspots for vector-borne and zoonotic diseases.

(4) MTF/MEDGRP PH/PM department shall establish liaison with the [local public health agency] and installation MTF with regard to preventing, reporting, and control of communicable diseases including vector-borne and zoonotic diseases. This will include vector surveillance and disease occurrence information.

(5) MTF/MEDGRP PH/PM department shall maintain communications with appropriate clinical and ancillary support staff in order to obtain human surveillance information.

(6) PMSPs shall determine whether sufficient equipment and pesticide quantities are available for vector control operations or whether additional support will be needed and procure any necessary equipment. To avoid purchasing and storing large quantities of contingency pesticides, the PMSP should identify a source for the purchase of pesticides that can be delivered within 24 hours.

(7) All personnel applying pesticides on DoD property must be appropriately certified in accordance with reference (a).

(8) MTF/MEDGRP PH/PM department shall identify installation points of contact that will be needed to expedite disease prevention and control operations in the event of an emergency.

### b. Emergency Response Procedures

(1) After the occurrence of the disaster or emergency that threatens public health, the MTF/MEDGRP Director will task the PH/PM department to initiate preventive measures in accordance with this plan to control or prevent human disease

outbreaks.

(2) The PH/PM department will ensure that disease control and prevention measures are implemented and will coordinate efforts with the IPMC, PMSPs, and other installation departments and stakeholders.

(3) MTF/MEDGRP medical staff and MTF/MEDGRP PHEO will provide disease-specific information to all interested parties. The PHEO will be responsible for communicating information to all medical personnel under their jurisdiction. If the disease involves domestic animals as well, medical should consult the U.S. Army Veterinary Services. PHEO will help the installation Commander make Health Protection level determinations.

(4) [Installation Name] PH/PM department will inform the [Installation Commander, Service Public Health Center, local health department, insert additional stakeholders here, etc.] when this plan is activated.

(5) Medical shall submit a Medical Event Report (MER) via the Disease Reporting System Internet (DRSi) if a civilian, dependent, or military member is diagnosed with a vector-borne or zoonotic disease. For DRSi procedures, go to <http://www.med.navy.mil/sites/nmcphc/program-and-policy-support/drsi/Pages/default.aspx>.

[Installation Name] MTF/MEDGRP PH/PM shall also submit a report to the [PHC]. Case reports will also be submitted into MHS Genesis. DHA Armed Forces Health Surveillance Division will track cases and to provide epidemiological assessment and support.

(6) [Installation] PH/PM department shall conduct surveillance and operations to prevent or control a disease outbreak in coordination with the [Installation Pest Management Coordinator, Pest Management PAR/QAE, PMSPs, etc.]; and if additional personnel are required, a request for [advanced PH/PM or contract pest control support] licensed in DoD Category 8 Pest control from the [next higher command level]. Suggested disease indicators or case responses for potential zoonotic or vector-borne diseases are included in attachments (5) and (6). Responses for disasters are found in attachment (7).

(7) The PMSP will conduct vector-control operations as deemed necessary by the [IPMC, or PAR/QAE, etc.].

(8) The [Installation Name] PH/PM department will request support from the [regional PH/PM command] if a contingency vector surveillance and control team is needed.

(9) If needed, US Air Force aerial spray support shall be requested using the

procedures in Chapter 7 of reference (g).

**c. Post-Emergency Procedures.**

The MTF/MEDGRP PH/PM department shall prepare an after action report to be sent to the regional or MAJCOM PH/PM command] containing the following information

- (1) Diagnosis and summary of human disease cases.
- (2) Implicated vector and contributing environmental factors.
- (3) Survey and surveillance methods used and data identifying breeding sites and target locations for control operations.
- (4) Preventive and control methods used including effectiveness of those methods.
- (5) Names and agencies of personnel involved.
- (6) Lessons learned and recommendations.

**APPENDIX 1: Points of Contact for Emergency Vector Control Planning**

Service	Responsible Party	Function	Contact Information
Installation Commander	NAME		PHONE NUMBER and EMAIL
IPM Coordinator	NAME		PHONE NUMBER and EMAIL
MTF/MEDGRP Director	NAME		PHONE NUMBER and EMAIL
MTF/MEDGRP PH/PM Department Head	NAME		PHONE NUMBER and EMAIL
MTF/MEDGRP ESO/EHO/BEE/PH			
MTF/MEDGRP PHEO			
Public Works Officer	NAME		PHONE NUMBER and EMAIL

PAR/QAE			
Add additional installation resources and stakeholders			
Regional Public Health Command	NAME		PHONE NUMBER and EMAIL
Regional or MAJCOM Pest Management Consultant	NAME		PHONE NUMBER and EMAIL
Vector testing facility			
Add Local and State vector control and public health agencies and other resources	NAME		PHONE NUMBER and EMAIL
MTF Director			
MTF ESO/EHO/BE			
MTF PHEO			

**APPENDIX 2: Locations of Concern during a Vector Emergency**

Location Name	Risk Level	Vector risks at location	GPS Coordinates
<i>Example: Lima Peru International Elementary school</i>	<i>High</i>	<i>Dengue, Malaria, chikungunya, tick-borne diseases</i>	<i>N00.00000000 E00.00000000</i>

### APPENDIX 3: Equipment Available for Emergency Vector Control

Equipment	Formulation	Use	Location
Hand-held ULV generator	ULV concentrates	Small- and medium-scale indoor and outdoor space spray	Pest Control Shop
Additional ULV or thermal fog sprayers	ULV concentrates	Large area application of space spray for flying insects	Pest Control Shop

**APPENDIX 4: Disease Vectors and Diseases found in State/Location**

<b>SPECIES</b>	<b>LARVAL HABITAT</b>	<b>BITING TIME</b>	<b>FLIGHT RANGE</b>	<b>DISEASE CARRIED</b>
<i>Aedes aegypti</i>	AC	D	500 ft	CF, DF, YF, ZV
<i>Aedes albopictus</i>	AC, TH	D	100–300 yd	CF, DF, YF, ZV
<i>Aedes taeniorhynchus</i>	SM, P, GP, Bogs	C, N	Near Habitat	SLE, EEE
<i>Aedes vexans</i>	FW, GP, IP	C, N	1–15 mi	SLE, EEE, WNV
<i>Anopheles atropos</i>	SM	C, N	1–5 mi	WNV
<i>Anopheles bradleyi/ crucians</i>	SM, FS, LM	C, N	1–2 mi	EEE, WNV
<i>Anopheles quadrimaculatus</i>	GP, P	C	1-2 mi	M
<i>Culex nigripalpus</i>	GP, FW, DD	C	1/2–1 mi	SLE, WNV, EEE
<i>Culex quinquefasciatus</i>	AC, SCB, GRP	C, N	1/4–1/2 mi	SLE, WNV
<i>Culex restuans</i>	WP, GRP, DD	C, N	1–2 mi	WNV
<i>Culex salinarius</i>	AC, GP, LM, FS	C, N	1/4–5 mi	WNV, EEE
<i>Culiseta melanura</i>	BOG, FS	C, N	Near Habitat	EEE
<i>Ixodes scapularis</i>	N/A	D, N	N/A	Lyme disease
<i>Dermacentor variabilis</i>	N/A	D, N	N/A	RMSF
<i>Phlebotomus spp</i>	Rodent burrows	C	300-2000 yd	Leishmaniasis

<b>KEY TO HABITATS</b>	<b>KEY TO HABITATS</b>	<b>KEY TO DISEASES</b>
AC–Artificial Containers	LM–Lake Margins	CF- Chikungunya Fever
DD–Drainage Ditches	RE–Rooted Emerged Vegetation	DF- Dengue Fever

FS–Freshwater Swamps	SCB–Sewage Catch Basins	EEE–Eastern Equine Encephalitis
FW–Floodwaters	SM–Salt Marshes	M- Malaria
WP–Woodland Pools	TH–Tree Holes	SLE- St Louis Encephalitis
GP–Grassland Pools	TRP–Temporary Rain Pools	WNV–West Nile Virus
GRP–Ground Pools	P–Ponds	YF–Yellow Fever
		ZV- Zika Virus
<b>KEY TO BITING TIMES</b>		
C–Crepuscular (dawn and dusk)		
D–Day		
N–Night		
The data is derived from the Center of Disease Control		

<b>Common Tick Species and Associated Tick-Borne Diseases</b>		
<b>SPECIES</b>	<b>COMMON NAMES</b>	<b>DISEASE CARRIED</b>
<i>Amblyomma americanum</i>	Lone Star Tick	AGS, HE, STARI, T
<i>Amblyomma maculatum</i>	Gulf Coast Tick	SFR
<i>Dermacentor andersoni</i>	Rocky Mountain Wood Tick	RMSF, T
<i>Dermacentor occidentalis</i>	Pacific Coast Tick	RMSF, PCTF, CTF, T
<i>Dermacentor variabilis</i>	American Dog Tick	RMSF, T, TP
<i>Ixodes pacificus</i>	Western Blacklegged Tick	LD, HA
<i>Ixodes scapularis</i>	Deer Tick, Blacklegged Tick	LD, HA, HB, PV, STARI
<i>Rhipicephalus sanguineus</i>	Brown Dog Tick	T
Note: Other tick species may be found in a given area, but other U.S. hard tick species are not known to transmit tick-borne diseases to humans.		

<b>Keys to Diseases</b>	
AGS–Alpha gal syndrome (red meat allergy) CTF–Colorado tick fever HA–Human anaplasmosis HB–Human babesiosis HE–Human ehrlichiosis LD–Lyme Disease PCTF–Pacific coast tick fever	PV–Powassan virus RMSF–Rocky Mountain Spotted Fever SFR–Spotted fever rickettsiosis STARI–Southern Tick-Associate Rash Illness T–Tularemia TP – Tick Paralysis

## APPENDIX 5: Mosquito-borne Arboviral Disease Risk/Response Matrix

Definitions and stepwise response for risk categories for mosquito-borne arboviral disease outbreaks in the United States. Risk categories are tentative and approximate. Local and regional characteristics may alter the risk level at which specific actions must be taken.

Category	Probability of outbreak	Definition	Recommended response
0	Negligible or none	Off-season; adult vectors inactive; climate unsuitable	None required; may pursue source reduction and public education activities
1	Remote	Spring, summer, or fall; adult vectors active but not abundant; ambient temperature not satisfactory for viral development in vectors	Source reduction; use larvicides at specific sources identified by entomologic survey; maintain vector and virus surveillance
2	Possible	Focal abundance of adult vectors; temperature adequate for extrinsic incubation; seroconversion in sentinel hosts	Response from category 1 plus: Increase larvicide use in/near urban areas; initiate selective adulticide use; increase vector and virus surveillance

Month YYYY

3	Probable	Abundant adult vectors in most areas; multiple virus isolations from enzootic hosts or a confirmed human or equine case; optimal conditions for extrinsic incubation and vector survival; these phenomena occur early in the “normal” season for viral activity	<b>Implement emergency control contingency plan:</b> Response in category 2 plus: Adulticiding in high risk areas; expand public information program (use of repellents, personal protection, avoidance of high vector contact areas); initiate hospital surveillance for human cases
4	Outbreak in progress	Multiple confirmed cases in humans	<b>Continue with emergency control contingency plan:</b> Concentrate available resources on strong adulticiding effort over areas at risk; hold daily public information briefings on status of epidemic; continue emphasis on personal protective measures; maintain surveillance of vector/ virus activity, human cases

**APPENDIX 6: Suggested Disease Indicator or Case Responses for Mosquito-borne Encephalitis**

<b>Finding</b>	<b>Action to Take</b>	<b>Who to Contact</b>
<p>Bird positive for arboviral encephalitis (or mosquito pool, or sentinel flock)</p>	<ul style="list-style-type: none"> <li>• Expand dead bird surveillance.</li> <li>• Review mosquito vector information and provide information to PMCs, pest control providers, and natural resources managers.</li> <li>• Initiate larval and adult surveillance in key areas.</li> <li>• Initiate larval and adult control in key areas if necessary.</li> <li>• Release bite prevention message to public.</li> <li>• Provide arboviral encephalitis clinical information to health care providers.</li> <li>• Conduct active case surveillance.</li> </ul>	<ul style="list-style-type: none"> <li>• Regional PHC, Department of Health (DOH), local health agency, health care providers, installation DoD pest management personnel, PAO</li> </ul>
<p>Horse case of arboviral encephalitis</p>	<ul style="list-style-type: none"> <li>• Notify U.S. Army Veterinary Service</li> <li>• Conduct active human case surveillance.</li> <li>• Release prevention message to public.</li> <li>• Initiate larval and adult control.</li> </ul>	<ul style="list-style-type: none"> <li>• Regional PHC, USA Veterinary Service, DOH, local health agency, health care providers, installation DoD pest management personnel, PAO</li> </ul>

Month YYYY

Human case of arboviral encephalitis	<ul style="list-style-type: none"><li>• Contact public affairs officer regarding release of information.</li><li>• Conduct active case surveillance.</li><li>• Initiate epidemiological and entomological investigation.</li><li>• Initiate adult mosquito control and then larval control.</li></ul>	<ul style="list-style-type: none"><li>• Regional PHC, DOH, local health agency, health care providers, installation DoD pest management personnel, installation or regional commander, PAO</li></ul>
New mosquito vector species identified	<ul style="list-style-type: none"><li>• Expand mosquito surveillance to determine distribution.</li><li>• Provide public information/ education on habitat reduction and bite prevention.</li></ul>	<ul style="list-style-type: none"><li>• Regional PHC, DOH, local health agency, installation DoD pest management personnel</li></ul>
Adapted from Washington State Mosquito borne Disease Response Plan, November 2002; Washington State Department of Health		

**APPENDIX 6: Suggested Disease Indicator or Case Responses for Rabies**

<b>Finding</b>	<b>Action to Take</b>	<b>Who to Contact</b>
Rabid animal identified	<ul style="list-style-type: none"> <li>• Notify U.S. Army Veterinary Service</li> <li>• Investigate human and animal contacts and coordinate with health care providers regarding prophylactic measures.</li> <li>• Release prevention message to public.</li> <li>• Assess risk to humans and animals.</li> <li>• Increase animal control measures.</li> <li>• Contact public affairs officer regarding release of information.</li> </ul>	<ul style="list-style-type: none"> <li>• Regional PHC, USA Veterinary Service, local health agency, health care providers, installation DoD pest management personnel, animal control personnel, installation or regional commander, PAO</li> </ul>
Human case of rabies	<ul style="list-style-type: none"> <li>• Contact public affairs officer regarding release of information.</li> <li>• Conduct active case surveillance.</li> <li>• Initiate epidemiological investigation.</li> <li>• Identify animal(s) that may have resulted in infection.</li> <li>• Increase animal control measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Regional PHC, local health agency, health care providers, installation DoD pest management personnel, installation or regional commander, PAO</li> </ul>
Adapted from Washington State Mosquito borne Disease Response Plan, November 2002; Washington State Department of Health		

## APPENDIX 7: Suggested Vector Management Responses in the Event of a Disaster

Disaster Event	Action to Take	Who to Contact
Storms/Hurricanes	<ul style="list-style-type: none"> <li>• Identify potential areas of increased vector abundance.</li> <li>• Assess disease risks to humans.</li> <li>• For displaced persons that are berthed in tents, conduct vector assessments around those areas.</li> <li>• Initiate vector surveillance and control if necessary.</li> <li>• Implement personal protective measures (i.e. mosquito nets, insect repellent) if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>• Regional PHC, local health agency, installation DoD pest management personnel</li> </ul>
Flood	<ul style="list-style-type: none"> <li>• Identify potential areas of increased vector abundance.</li> <li>• Assess disease risks to humans.</li> <li>• For displaced persons that are berthed in tents, conduct vector assessments around those areas.</li> <li>• Initiate vector surveillance and control, especially for mosquitoes, if necessary.</li> <li>• Implement personal protective measures (i.e. mosquito nets, insect repellent) if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>• Regional PHC, local health agency, installation DoD pest management personnel</li> </ul>
Adapted from Washington State Mosquito borne Disease Response Plan, November 2002; Washington State Department of Health		

## A-7. Laws, Regulations, Policies, and Guidance Related to Pesticides and Pest Management

<b>Federal</b>		
<b>Title/Reference</b>	<b>Date</b>	<b>Relevant Requirements / Guidance</b>
<p><a href="#">Federal Insecticide, Fungicide, and Rodenticide Act</a> (7 U.S.C 136 et seq.) (codified at 40 CFR Parts <a href="#">152 180</a>)</p> <p><a href="#">Labeling Requirements for Pesticides and Devices</a> (40 CFR 156)</p> <p><a href="#">Pesticide Management and Disposal</a>, (40 CFR 165)</p> <p><a href="#">Exemption of Federal and State Agencies for Use of Pesticides under Emergency Conditions</a> (40 CFR 166)</p> <p><a href="#">Certification of Pesticide Applicators</a>, (40 CFR 171)</p>	1947, and amendments	<p>Requires pesticide and applicator registration with the U.S. EPA, properly labeled containers, pesticide application records, adequate worker safety, and the proper disposal of unused products. Pesticides are also classified under this act as general use or restricted use.</p> <p>Integrated Pest Management for Federal agencies (7 USC § 136r-1) requires Federal agencies to use IPM techniques in carrying out pest management activities and promote IPM.</p>
<p><a href="#">Animal Damage Control Act</a> (7 USC 426-426c) <a href="http://www.animallaw.info/statutes/stusfd7usc426.htm">http://www.animallaw.info/statutes/stusfd7usc426.htm</a></p>	1931, amended in 1987 and 1991	Gives the Secretary of Agriculture broad authority to investigate and control certain predatory or wild animals and nuisance mammal and bird species.
<p><a href="#">Clean Air Act (CAA)</a> (42 USC 7401 et seq.) <a href="http://www.epa.gov/air/caa/">http://www.epa.gov/air/caa/</a></p>	1955, amended in 1970, 1977, and 1990	Mandates the prevention and control of air pollution from toxic emissions including pesticides.
<p><a href="#">Clean Water Act</a> (Amended the Federal Water Pollution Control Act of 1972) (33 USC 1251-1387) <a href="http://www.law.cornell.edu/uscode/text/33/chapter-26">http://www.law.cornell.edu/uscode/text/33/chapter-26</a></p>	1977, reauthorized in 1987	Calls for the restoration and maintenance of the chemical, physical, and biological integrity of our nation's waters, including sensitive environments like wetlands. This Act prohibits non-storm water discharges from entering surface waters.

<p><a href="#">Endangered Species Act</a> (16 USC 1531-1544), (50 CFR Part 402) Federal list of endangered/ threatened plants and wildlife is at 50 CFR §§ 17.11 &amp; 17.12</p> <p><a href="#">Interagency Cooperation</a> (16 USC 1536)</p> <p><a href="#">Interagency Cooperation— Endangered Species Act of 1973, as Amended</a> (50 CFR 402)</p>	<p>1973, amended in 1978</p>	<p>Dictates that all federal agencies must protect listed plants and animals and their habitats from harm. Indicates that pesticide formulations and application methods be reviewed by the U.S. Fish and Wildlife Service to determine whether there could be adverse effects.</p>
<p><a href="#">Endangered Species Protection Bulletins (ESPB)</a></p>		<p>Bulletins set forth geographically-specific pesticide use limitations for the protection of endangered or threatened species and their designated critical habitat.</p>
<p><a href="#">Federal Food, Drug, and Cosmetic Act (FFDCA)</a>, (21 USC 301-399d)</p>	<p>25 Jun 1938, amended in 1951, 1962, 1990, 1994, 1997, 2007</p>	<p>Mandates tolerances and exemptions for pesticide chemical residues in food.</p>
<p><a href="#">Federal Noxious Weed Act</a> (7 USC 2814) incorporated into the Plant Protection Act</p>	<p>FNWA 1974 PPA 2000</p>	<p>Requires federal agencies to develop and implement noxious weed management programs on federal land. <a href="#">Federal Noxious Weed List</a></p>
<p><a href="#">Food Quality Protection Act (FPQA)</a>, Section 303 – Integrated Pest Management (Public Law 104-170)</p>	<p>1996, amendment to FIFRA and FDCA</p>	<p>Mandates that federal agencies use IPM techniques in pest management activities and promote IPM through procurement and regulatory policies. Primarily established safety standards for pesticides applied to foods.</p>
<p><a href="#">Migratory Bird Treaty Act</a> (16 USC 703)</p>	<p>1918, with numerous amendments</p>	<p>Requires permits to take migratory birds.</p>
<p><a href="#">National Environmental Policy Act (NEPA)</a> (42 USC 4321-4347)</p>	<p>1969</p>	<p>Requires a detailed environmental impact statement for any major federal action that can significantly affect the environment. This may include pest management operations that involve large areas of land, application of chemicals to waterways and aerial application of pesticides.</p>
<p><a href="#">National Oil and Hazardous Substances Pollutant Contingency Program</a> (40 CFR 300)</p>	<p>15 Sep 1994</p>	<p>Provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants.</p>

<p><a href="#">National Pollution Discharge Elimination System (NPDES)—EPA General Permit</a> Covers the following states: MA, ID, NH, NM, DC, and federal facilities in WA, CO, DE, and VT.</p>	31 Oct 2021	Operators that apply pesticides that result in discharges from the following use patterns may have to submit a notice of intent (NOI) and create a Pesticide Management Discharge Plan (PMDP) if they meet certain criteria: (1) mosquito and other flying insect pest control; (2) weed and algae control; (3) animal pest control; and (4) forest canopy pest control.
<p><a href="#">Non-indigenous Aquatic Nuisance Prevention and Control Act</a> (16 USC 4700 et seq.)</p>	1990	Espouses taking preventive management measures nationwide to prevent and control unintentionally introduced non-indigenous aquatic species and prevent further distribution of these species.
<p><a href="#">OSHA Hazard Communication Standards</a> (29 CFR 1910)</p>	1970	Stipulates the requirements for applicable and adequate training of all employees regarding hazardous substances (including pesticides) and providing access to SDSs for all chemicals.
<p><a href="#">Recordkeeping on Restricted Use Pesticides by Certified Applicators: Surveys and Reports</a> (7 CFR 110)</p>	9 Apr 1993	Requirements for recordkeeping on restricted use pesticides by all certified applicators, both private applicators and commercial applicators.
<p><a href="#">Resource Conservation and Recovery Act (RCRA)</a> (42 USC 6901 et seq.) (40 CFR § 260-265)</p>	1976, amended in 1986	Requires proper disposal of waste pesticides and pesticide containers.
<p><a href="#">Sikes Act Improvement Act (SAIA)</a> (16 USC 670)</p>	31 Dec 2003	Authorizes the Secretary of Defense to develop cooperative plans for conservation and rehabilitation programs on military reservations and modify or improve habitat for endangered species and migratory birds. This includes authorizing the elimination of noxious weeds in efforts to rehabilitate native species.
<p><a href="#">Standards for Universal Waste Management</a> (40 CFR 273)</p>	11 May 1995	Establishes requirements for managing pesticides.
<p><a href="#">Toxic Chemical Release Reporting: Community Right-to-Know</a> (40 CFR 372)</p>	30 Nov 1994	Requirements for the submission of information relating to the release of toxic chemicals under section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986.

Toxic Substances Control Act (TSCA) (15 USC 2601 et seq.)	1976	Requires that new chemicals, including pesticides, be registered and that testing for human health and environmental hazards be performed.
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<b>Department of Defense</b>		
<b>Title/Reference</b>	<b>Date</b>	<b>Relevant Requirements/ Guidance</b>
<a href="#">DoD Instruction 4150.07</a> , DoD Pest Management Program	26 Dec 2019	Establishes policy, assigns responsibilities, and prescribes procedures for the DoD Pest Management Program
<a href="#">DoD 4150.07-M, Volume 1</a> , DoD Pest Management Program Elements and Implementation: Structure and Operation	22 Jan 2020	Implements policy, assigns responsibilities, and provides procedures for the design and operation of the DoD Pest Management Program.
<a href="#">DoD 4150.07-M, Volume 2</a> , DoD Pest Management Program Elements and Implementation: Pesticide Applicator Training and Certification Program	22 Jan 2020	Implements policy, assigns responsibilities, and provides procedures for: <ul style="list-style-type: none"> <li>• The DoD Pesticide Applicator Training and Certification Program</li> <li>• DoD training and certification of pesticide applicators pursuant to Section 136 of Title 7, United States Code, also known and referred to in this volume as the “Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).”</li> </ul>
<a href="#">DoD Directive 4715.1E</a> , Environment, Safety, and Occupational Health (ESOH)	30 Dec 2019	Establishes the AFPMB which provides information, guidance, and publications related to pest and pesticide management. Also advocates implementing IPM into DoD acquisition, procurement, maintenance, and repair processes for systems, equipment, facilities, and land.
DoD Directive 5134.01 w/CH-1, Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L))	9 Dec 2005	Establish policies and procedures for the management of DoD installations and environment to support military readiness with regard to pest management.

DTR 4500.9-R, Defense Transportation Regulation, <a href="#">Chapter 505, Agricultural Cleaning and Inspection Requirements</a>	14 Apr 2022	Prescribes procedures, assigns responsibilities, and defines requirements for the prevention of the introduction of agricultural pests/invasive species into new areas.
<a href="#">Department of Defense Foreign Clearance Guide</a>	Electronic	Establishes biosecurity, quarantine, and aircraft disinsection requirements.
<b>Navy</b>		
<b>Title/Reference</b>	<b>Date</b>	<b>Relevant Requirements/ Guidance</b>
<a href="#">CNICINST 3750.1E, Navy Bird and Animal Aircraft Strike Hazard (BASH) Program Implementing Guidance</a>	11 Feb 2011	Establishes policy and procedures for implementing the Commander, Navy Installations Command (CNIC) Bird/Animal Aircraft Strike Hazard (BASH) Program.
<a href="#">Commander Navy Installation BASH Manual</a>  <a href="#">Appendix 1: BASH Self-Assessment Checklist</a> (Annual; CAC required)	1 Apr 2018	Supports Navy Bird/Animal Aircraft Strike Hazard (BASH) policy, identifies key BASH statutory and regulatory requirements, and provides advisory information for management of a BASH program at Navy airfields. The intent is to support the Navy mission by safeguarding air operations assets and flight crews by decreasing the probability of bird or wildlife strikes with aircraft.
<a href="#">eBusiness Operations Office Instruction (EBUSOPSOFFINST) 4200.2</a> , Department of Navy Non-appropriated Fund (NAF) Policies and Procedures for the Operation and Management of the Government Commercial Purchase Card Program	18 June 2004	Government Purchase Card policy regarding the purchase of pesticides, pesticide application equipment, and pesticide application services.
<a href="#">NAVMED P-5010-1, Manual of Naval Preventive Medicine — Tri-Service Food Code</a>	1 Mar 2019	Establishes standardized military food safety standards, criteria, procedures, and roles for the sanitary control and surveillance of food to mitigate risk factors known to cause foodborne illness.
NAVMED P-5010, Manual of Naval Preventive Medicine Chapter 8—Navy Entomology and Pest Control Technology	9 Nov 2004	Guidelines and procedures on the prevention, surveillance, and control of medically important pests.

NMCPHC-TM 6260.9A, Occupational and Environmental Medicine Field Operations Manual	Apr 2017	Standardizes medical surveillance and job certification procedures of employees, the management of occupational injuries and illnesses, their reporting and recordkeeping requirements, and training and certification requirements for OEM service providers.
NMCPHC-TM OM 6260, Medical Surveillance Procedures Manual and Medical Matrix (Edition 12)	Aug 2015 Revised 16 Nov 2016	Procedures for the systematic assessment of employees exposed or potentially exposed to occupational hazards.
<a href="#">OPNAVINST 5090.1E</a> , Environmental Readiness Program	03 Sep 2019	Overarching document implementing OPNAV M-5090.1. Provides requirements, delineates responsibilities, and issues implementing policy guidance for the management of the environmental resources for all Navy ships and shore activities.
<a href="#">OPNAV M-5090.1</a> , Environmental Readiness Program Manual (Chapter 24—Pesticide Compliance Ashore)	25 Jun 2021	Implements the policy set forth in Chief of Naval Operations Instruction (OPNAVINST) 5090.1E, Environmental Readiness Program. Generally requires all pesticide applicators to be DoD- or state-certified. In addition, pest management records must be kept and a pest management plan developed, implemented, and maintained that stresses the importance of IPM.
OPNAVINST 5100.23G, Navy Occupational Safety and Health (NAVOSH) Program	11 July 2011	Requires that pest control operations be thoroughly evaluated to identify and quantify potential health hazards.
OPNAVINST 6210.2A, Quarantine Regulations of the Navy	22 Sep 2015	Delineates the Navy and Marine Corps responsibility to prevent the introduction of medically and economically important pests into the United States.

<a href="#">OPNAVINST 6250.4C</a> , Pest Management Programs	11 April 2012	The Navy policy that implements DoD's Pest Management Program. Provides policy specific to Navy operations. This includes record keeping, reporting, safety, management of contracted operations, pest management plans, and environmental protection. Provides responsibilities for preventive medicine.
Policy Letter Preventing Feral Cat and Dog Populations on Navy Property	10 Jan 2002	Clarifies the application of policy regarding the prevention of free roaming (also called wild, feral or stray) cat and dog populations on Navy installations.
<b>Marine Corps</b>		
MCO 5090.2, Environmental Compliance and Protection Manual <a href="#">Volume 14</a> : Integrated Pest Management	11 Jun 2018	Volume 14 establishes Marine Corps policy and responsibilities for complying with the legal use of pesticides at Marine Corps installations in accordance with the Department of Defense (DoD) pest management specifications outlined in DoD Instruction 4150.07
<b>Army</b>		
AR 200-1, Environmental Protection and Enhancement	13 Dec 2007	Chapter 5 covers the pest management program.
<b>Air Force</b>		
<a href="#">AFMAN 32-1053, Integrated Pest Management Program</a>	5 Aug 2019	Provides guidance for pest management programs at Air Force installations.
<a href="#">AFI 48-102, Medical Entomology Program</a>	8 Sep 2019	Assigns responsibilities for the prevention of vector-borne diseases and management of medically important pests through the application of integrated pest management practices.
<b>Unified Facilities Criteria (UFC) and Guide Specifications (UFGSs)</b>		

<a href="#">UFC 3-201-02</a> Landscape Architecture	9 Feb 2021	This UFC establishes minimum landscape architectural requirements and best practices to promote consistent landscape architectural quality for DoD facilities worldwide. This includes practices to prevent planting invasive species and integrated pest management landscape pests
<a href="#">UFGS-31 31 16.13</a> (USACE / NAVFAC / AFCEC / NASA), Chemical Termite Control	1 Aug 2016	This guide specification covers the requirements for termiticide treatment measures for subterranean termite control.
<a href="#">UFGS-31 31 16.19</a> (USACE / NAVFAC / AFCEC / NASA), Termite Control Barriers	1 Feb 2016	This guide specification covers the requirements for termite control barrier systems, including meshes and basaltic sand.

### SPECIAL INTEREST ITEMS

#### Bird/Wildlife Aircraft Strike Hazard (BASH)

Title/Reference	Date	Relevant Requirements/ Guidance
<a href="#">Airport Wildlife Population Management, Airport Cooperative Research Program (ACRP) Synthesis 39 (sponsored by FAA)</a>	March 2013	Provides airport managers and biologists with a working reference document that reviews the tools, methods, techniques, procedures, and considerations for reducing aircraft collisions associated with wildlife population control management on airports and in the immediate surrounding areas.
<a href="#">FAA Wildlife Hazard Management at Airports</a>	July 2005	Assess an airport's wildlife hazards and to make recommendations to resolve any wildlife issues
<a href="#">Wildlife at Airports, USDA APHIS</a>	Feb 2017	Focused on management efforts to reduce wildlife hazards at airports.
<a href="#">Air Force BASH Program</a>		

#### Vector-Borne Diseases

Title/Reference	Date	Relevant Requirements/ Guidance
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<a href="#">West Nile Virus Surveillance and Control Guide for U.S. Navy and Marine Corps Installations</a>	2014	Explains the importance of WNV surveillance, describes the steps involved in establishing a surveillance and control program, and provides a threshold when control measures can be carried out, based on observed WNV infection in birds, mosquitoes and humans.
<a href="#">Navy Medicine: Chikungunya, Dengue, Zika, and Other Arboviral Infections</a>		Informs individuals about the disease and provides the knowledge and tools for the surveillance and control of the mosquito species that transmit CHIKV.
<a href="#">Aedes Surveillance and Control Plan for U.S. Navy and Marine Corps Installations</a>	Feb 2016	Provide basic knowledge for the surveillance and control of Aedes mosquitos on military installations.
<a href="#">Controlling Aedes aegypti and Aedes albopictus: Information for Vector Control Programs</a>	31 Mar 2016	CDC factsheet providing basic information about Aedes vectors.
<a href="#">Surveillance and Control of Aedes aegypti and Aedes albopictus in the United States</a>	31 Mar 2016	CDC factsheet providing basic information about the surveillance and control of Aedes vectors.
<b>Invasive Species</b>		
<a href="#">Executive Order 13751, Safeguarding the Nation From the Impacts of Invasive Species</a>	5 Dec 2016	Prevent the introduction, establishment, and spread of invasive species, as well as to eradicate and control populations of invasive species that are established. Amends EO 13112, Invasive Species.
<a href="#">Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species, US Dept of Interior Technical Memorandum No. 86-68220-07-05</a>	Sep 2009	This manual provides guidance for inspecting and cleaning vehicles and equipment to help prevent the spread of noxious invasive species.
<a href="#">National Invasive Species Council Management Plan 2016-2018</a>	11 Jul 2016	Identifies the interdepartmental actions that the Federal government and its partners can take to prevent, eradicate, and control invasive species, as well as recover species and restore habitats and other assets adversely impacted by invasive species.
<b>Pesticide Application</b>		

<a href="#">NebGuide G1773</a> , Spray Drift of Pesticides	Nov 2013	Discusses conditions that cause particle drift and methods to reduce drift potential.
NebGuide G1773, Spray Drift of Pesticides	Nov 2013	Discusses conditions that cause particle drift and methods to reduce drift potential.
<b>Pollinators</b>		
<b>Title/Reference</b>	<b>Date</b>	<b>Relevant Requirements/ Guidance</b>
Presidential Memorandum – Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators	20 Jun 2014	Develop a National Pollinator Health Strategy, which shall include explicit goals, milestones, and metrics to measure progress.
DoD Policy to Use Pollinator-Friendly Management Prescriptions - Memo	5 Sep 2014	Expands DoD policy to use current best management practices, as appropriate, specifically to protect pollinators and their habitats, and establishes policy to coordinate with partners on pollinator issues.
National Strategy to Promote the Health of Honey Bees and Other Pollinators	19 May 2015	Identify and recommend, as appropriate, priority conservation needs for native plants and their habitats, and to coordinate implementation of programs for addressing those needs.
<b>INTERNATIONAL</b>		
<b>Title/Reference</b>	<b>Date</b>	<b>Relevant Requirements / Guidance</b>
<a href="#">DoDI 4715.05</a> , Environmental Compliance at Installations Outside the United States	Nov 2013	Establishes policy and assigns responsibilities for managing environmental compliance to protect human health and safety outside the United States on installations under DoD control.
DoDM 4715.05, Overseas Environmental Baseline Guidance Document (OEBGD) <a href="#">Volume 1</a> : Conservation <a href="#">Volume 2</a> : Air and Toxics <a href="#">Volume 3</a> : Water <a href="#">Volume 4</a> : Hazardous Material, Storage Tanks, Spills, and Pesticides <a href="#">Volume 5</a> : Waste	29 Jun 2020	For OCONUS installations that do NOT have an FGS, Volume 4, Section 8 contains standards on the prevention of threats to human health and the environment from the storage and use of pesticides.