
**ENVIRONMENTAL ASSESSMENT
FOR THE IMPLEMENTATION OF THE
FORT GEORGE G. MEADE
INTEGRATED PEST MANAGEMENT PLAN**

FINAL

February 2006

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EXECUTIVE SUMMARY

INTRODUCTION

This Environmental Assessment (EA) evaluates potential environmental effects that may occur as a result of the implementation of an Integrated Pest Management Plan (IPMP) for Fort Meade, Maryland (FGGM). Integrated pest management is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks. The proposed IPMP is a guide designed specifically for the Fort Meade installation and its managed areas to reduce reliance on pesticides and to enhance environmental protection; it reflects current DoD/Army policies, procedures and standards and incorporates the requirements of the Environmental Protection Agency (EPA) and the State of Maryland. Federal Agencies are mandated to use integrated pest management by Public Law (Section 136r-1 of title 7, United States Code). Army Regulation (AR) 200-5 requires all installations under ownership or control of the Department of the Army to prepare and implement an IPMP.

PROPOSED ACTION

The Fort Meade Garrison proposes to adopt and implement an IPMP that provides an integrated and comprehensive method for managing pests on lands within the boundaries of, or under the control of Fort Meade, Maryland. The proposed action defines roles and responsibilities for pest management at all levels within Fort Meade and provides a uniform basis for addressing all applicable legal requirements and best management practices consistent with achievement of the needs, goals, and objectives of the Fort Meade military mission. Implementation of the IPMP would establish a formal mechanism to manage pests (plant, animal, or insect) at the FGGM installation.

ALTERNATIVES

The No Action Alternative is the only alternative to the proposed action considered in this EA and consists of continuing the existing procedures. The No Action Alternative also serves as a benchmark against which the proposed action can be evaluated.

The DoD and Army's pest management program objective is to use an integrated pest management approach for the judicious use of both non-chemical and chemical control techniques to achieve effective pest control with minimal environmental impacts. There are no other alternatives considered in this EA that would meet this objective.

ENVIRONMENTAL CONSEQUENCES

This EA analyzes direct and indirect environmental effects for the following resources specific to the Fort Meade Installation:

- *Land Use*
- *Air Quality*
- *Noise*
- *Geology and Soils*
- *Water Resources*
- *Biological Resources*
- *Cultural Resources*
- *Socioeconomics*
- *Environmental Justice*
- *Protection of Children*
- *Hazardous and Toxic Materials/Wastes*

The potential for cumulative effects is also addressed in this document.

CONCLUSIONS

In consideration of the integrated long-term planning approach of the FGGM IPMP, it is anticipated that significant negative impacts to the above mentioned resources would be avoided. The prescribed management and compliance actions presented in the FGGM IPMP stress the complete integration of all categories of pest management with ongoing FGGM plans and operations. Such comprehensive planning would help to prevent any significant environmental impacts that might have resulted from pest management actions on FGGM property. Implementation of the proposed action by FGGM would result in an overall positive impact relative to the no action alternative. An evaluation, by resource, of the impacts of the proposed action versus the impacts of the no action alternative (continuing existing practices) is summarized in the table on the following page. Accordingly, a Finding of No Significant Impact (FNSI) is appropriate under the National Environmental Policy Act (NEPA) and its implementing regulations (40 Code of Federal Regulations 1500-1508).

Potential Environmental Impacts of the Proposed Action				
Resource/ Impact Area	Action Alternative	Level of Impact	Type of Impact	Statement
Land Use	Proposed Action	Negligible	Neutral	There is no change to existing land use plans and policies or interference to emergency response.
	No Action Alternative	Negligible	Neutral	
Air Quality	Proposed Action	Minor	Negative (temporary)	Minor, temporary, negative impacts will occur if pest management techniques such as mechanical removal are utilized. The air quality will revert back to its original condition after such events. Therefore, no long-term significant negative impacts will occur.
	No Action Alternative	Minor	Negative (temporary)	Minor, negative impact due to the application of pesticides
Noise	Proposed Action	Minor	Negative (temporary)	Minor, temporary site specific increases in noise levels will occur if powered equipment or bird control noise devices are utilized for pest management practices. The noise levels at will revert back to the original condition once such devices are no longer used. Therefore, no long-term significant impacts will occur.
	No Action Alternative	Minor	Negative (temporary)	Temporary noise will occur during the application of pesticides. The noise levels at will revert back to the original condition once application has ceased. Therefore, no long-term significant impacts will occur.
Geology and Soils	Proposed Action	Minor	Positive	Minor, negative impacts will occur due to an increase in soil erosion by mechanical weed removal and a risk of possible soil contamination from pesticide applications. However, the long-term impact will be minor positive since fewer pesticides will be used and areas of weed removal will be reseeded and the pesticides will be broken down by microorganisms.
	No Action Alternative	Minor	Negative	The impact will be minor negative if non-chemical procedures are not implemented and thus utilize an additional amount of pesticides.

Potential Environmental Impacts of the Proposed Action - continued				
Resource/ Impact Area	Action Alternative	Level of Impact	Type of Impact	Statement
Water Resources	Proposed Action	Minor	Positive	Minor, positive temporary and long term impacts will occur as long as weed removal areas are reseeded and the recommended 100 feet buffer zone is implemented when herbicides are used.
	No Action Alternative	Minor	Negative	The impact will be minor negative if non chemical procedures are not implemented and the 100 feet buffer zone is not utilized when herbicides are used.
Biological Resources	Proposed Action	Minor	Positive	Minor, positive temporary and long term impacts will occur since the Integrated Pest Management Plan defines actions to take regarding target species.
	No Action Alternative	Minor	Negative	The no action alternative will provide minor, negative impacts if species specific and non-chemical procedures are not implemented.
Cultural Resources	Proposed Action	Minor	Positive	Minor, positive temporary and long term impacts will occur due to protecting and preserving any structures that might be listed or become listed on the National Registry of Historic Places.
	No Action Alternative	Minor	Negative	Any structure on or potentially listed on the Registry of Historic Places is not anticipated to be protected as well as under the integrated pest management plan.
Socioeconomics	Proposed Action	Minor	Positive	Implementation of the Integrated Pest Management Plan will have a minor positive effect by reducing costs of the program by reducing the amount of pesticides applied and thus reducing the amount of pesticides purchased.
	No Action Alternative	Minor	Negative	The costs of the program are not expected to be reduced because the amounts of pesticide purchases are not expected to be reduced.
Environmental Justice	Proposed Action	Minor	Positive	Reducing noxious pests by implementing the Pest Management Plan will have a minor positive impact by reducing health related problems.
	No Action Alternative	Minor	Negative	Implementation of the no action alternative is not expected to reduce noxious pests as readily as the proposed action.

Potential Environmental Impacts of the Proposed Action - continued				
Resource/ Impact Area	Action Alternative	Level of Impact	Type of Impact	Statement
Protection of Children	Proposed Action	Negligible	Neutral	Implementation of an integrated pest management plan will continue to protect children to the same standard thus producing a negligible impact.
	No Action Alternative	Negligible	Neutral	The current integrated pest management plan protects children at FGM.
Hazardous and Toxic Materials and Wastes	Proposed Action	Minor	Positive	A minor positive impact would occur due to a reduction of the pesticide quantities generated and stored.
	No Action Alternative	Minor	Negative	A minor negative impact would occur since the pesticide quantities generated and stored would not be reduced.

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ACRONYMS AND ABBREVIATIONS

AR	Army Regulation
ARNG	Army National Guard
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DoD	Department of Defense
DPWEMO	DPW Environmental Management Office
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMO	Environmental Management Office
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESMP	Endangered Species Management Plan
FEIS	Final Environmental Impact Statement
FNSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
ICRMP	Integrated Cultural Resources Management Plan
ICUZ	Installation Compatible Use Zone
IPM	Integrated Pest Management
IPMP	Integrated Pest Management Plan
IUA	Intensive Use Area
MHI	Medium Household Income
MDE	Maryland Department of Environment
NAAQS	National Ambient Air Quality Standards
NRCS	Natural Resource Conservation Service
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
POL	Petroleum, oil and lubricants
SIP	State Implementation Plan
SUP	Special Use Permit
US	United States
USA	United States Army
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

This Environmental Assessment (EA) is prepared in accordance with the National Environmental Policy Act (NEPA) 42 USC 4321-4370c, implementing the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500-1508), and the Department of the Army's implementing regulation, 32 CFR Part 651.

As required by Army Regulation (AR) 200-5, the Garrison Command at FGGM, Maryland, proposes to implement an Integrated Pest Management Plan (IPMP) for the installation and its managed areas. An IPMP is an internal Army compliance and management plan that integrates pest management requirements and activities with ongoing mission activities, allows for quick identification of potential conflicts between an installation's mission and pest management, and identifies compliance actions necessary to maintain the availability of mission essential properties. The IPMP is presented in Appendix A. Section 3.3. of the IPMP recommends an internal review and update of the Plan annually.

This EA will provide the basis upon which FGGM will determine whether to implement the Integrated Pest Management Plan (IPMP) or continue utilizing the current methods and procedures of pest control.

1.2 PURPOSE AND NEED

This EA assesses the environmental impacts of implementing an IPMP for FGGM and its facilities. The Army Pest Management Program is an extension of DoD Pest Management Program policies and procedures. As stated in the AR 200-5, the Objective of the DoD program and Army's pest management plan is to promote effective Integrated Pest Management (IPM) techniques at all Army installations and facilities. Therefore, it is necessary for FGGM to implement an IPMP. The Army pest management policy is committed to IPM at its facilities and installations because IPM techniques would ultimately result in the protection of health, property, and natural resources from damage by pests. The IPM also promotes training and readiness, minimizes risks to the environment and meets mandates for federal agencies to reduce environmental risks from hazardous chemicals.

The purpose of the proposed action is to implement an IPMP for pest management at FGGM that ensures compliance with all applicable pest management legal requirements including federal statutes, regulations, Executive Orders (EO), Presidential Memoranda, and Department of Defense (DoD), United States Army (USA), and Army National Guard (ARNG) guidelines. The IPMP establishes procedures to integrate legal compliance requirements into the day-to-day operational procedures of the Fort Meade headquarters and its subordinate facilities. The integrated pest management outlines of the IPMP identify both internal and external coordination procedures to handle pest management issues and the appropriate roles and responsibilities of the FGGM personnel in the management of pests and pesticides. A flow chart showing responsibilities is shown in Appendix B.

1.3 SCOPE

The CEQ encourages agencies (40 CFR 1502.20) to address broad program or policy decisions and to follow the programmatic analysis with site-specific analysis at the appropriate time. The policy guidance is meant to provide institutional assistance to the individual Installation Pest

Management Coordinator (IPMC) by providing a starting point from which to address specific pest issues. The proposed action specifies that all pesticides will be used, handled, transported, and disposed of in accordance with the Environmental Protection Agency (EPA) approved directions, the label guidance provided by the manufacture and DoD Instruction 4150.7, DoD Pest Management Program (Appendix C). Additionally, pesticides will only be applied by trained and certified applicators.

1.4 AGENCIES AND PUBLIC PARTICIPATION

Agencies and public participation in the NEPA process promotes better decision making and open communication between the public and government. All persons and organizations having a potential interest in the proposed action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the decision making process.

Public participation opportunities, with respect to the proposed action that is the subject of this EA, follow guidelines as specified by 32 CFR Part 651 (formerly AR 200-2). The final EA and, if appropriate, a FNSI will be made available to the public. FGGM will then observe a 30-day comment period, during which time any further comments submitted by agencies, organizations, or members of the public on the proposed action will be considered.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

Fort Meade, as a major installation for the Department of the Army, has taken general guidelines from the Department of Defense (DoD) pest management policy and is continuing to develop the Pest Management Program. The Army's pest management program objective is to use an integrated pest management approach for the judicious use of both non-chemical and chemical control techniques to achieve effective pest control with minimal environmental impacts. Integrated pest management, as used by the Army, is a decision making process designed to (1) identify the conditions causing a particular pest problem to occur; (2) devise ways to change those conditions to discourage recurrence of the problem; and (3) select the least-toxic mix of strategies and tactics to directly suppress the pest populations.

The Army proposes to use the integrated pest management approach by developing IPMPs to reduce the use of chemical treatment techniques by 50% over historic usage levels while also achieving effective pest control. These plans cover certification, reporting, and all other pest management activities. The reduction of chemical control techniques will, in some cases, be accompanied by an increase in the use of mechanical, cultural, and biological approaches. The goals of the Pest Management Plans are to (1) promote health, safety, and welfare of unit personnel through an effective pest management program; (2) promote installation protection; (3) ensure a professionally trained pest management force while supporting the mission of the Army to provide combat ready units for the national defense; and (4) minimize impacts on the natural and human environment.

The affected environment of the proposed action is facilities administered by FGGM. The resources evaluated as part of this EA include land use, air quality, noise, geology and soils, water, biological resources, cultural resources, socioeconomics, environmental justice, protection of children and hazardous and toxic materials/wastes.

2.2 ALTERNATIVES CONSIDERED

The proposed action presented above is the Preferred Alternative. The CEQ regulation (40 CFR 1502.14) requires the inclusion of the No Action Alternative. The No Action Alternative reflects the status quo and serves as a benchmark against which federal actions can be evaluated. The No Action Alternative is the only alternative to the proposed action considered in this EA. For this analysis, the status quo involves the management of pesticides at FGGM facilities under existing procedures (i.e. the IPMP would not be implemented).

No other alternatives were considered for evaluation in this EA because they would fail to meet the objectives of the DoD and Army Pest Management Program to prepare and implement an IPMP.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 GENERAL

This section describes the environmental and operational baseline conditions that currently exist at the Fort Meade installation. The potential environmental consequences of the Proposed Action, also referred to as the Preferred Alternative, will be evaluated and measured against the baseline conditions, also referred to as the No Action Alternative. Most potential types of impacts will vary depending on the site-specific pest management techniques needed or required (i.e., mechanical, cultural, biological, or chemical) and on site-specific resources (i.e., water resources, threatened and endangered species, and historical resources). The thresholds of concern are listed in Table 3.1-1 below.

Table 3.1-1 Thresholds of Concern^A

Area of Concern	Spatial Boundary	Threshold of Concern: ^B Alternative 1 or 2 would cause or result in:
Installation Land Use	Installation boundary	<ul style="list-style-type: none"> • Conflicts with existing or future land use plans at the project site or surrounding areas, or • Induces or precludes substantial new development or land uses.
Water Resources	Watershed, Installation boundary	<ul style="list-style-type: none"> • Violation of State water quality criteria for listed stream reaches and their tributaries. • Violation of Federal or State discharge permits. • Impairment of natural and scenic values of State Scenic Streams.
Regulated Material	Installation boundary, project footprint	<ul style="list-style-type: none"> • Impairment of Installation's ability to meet federally-mandated or Army objectives for waste minimization and pollution prevention. • Exceedance of existing facility or system capacity for HW/HM management, storage, disposal or emergency response, and/or • Public health or environmental hazard.
Air Quality	Installation boundary	<ul style="list-style-type: none"> • Exceedance of National Ambient Air Quality Standards. • Violation of Title V Operating Permit.
Cultural Resources	Site specific	<ul style="list-style-type: none"> • Irretrievable or irreversible damage to a prehistoric or historic site that is listed or is eligible/potentially eligible for listing on the National Register of Historic Places.
Biological Resources: Vegetation	Landscape Scale	<ul style="list-style-type: none"> • Permanent loss or degradation of designated rare/sensitive plant sites. • Introduction or increased prevalence of undesirable non-native species. • Permanent conversion or net loss of other forest types at landscape scale.
Biological Resources: Wildlife	Species Home Range, Local Habitat or Migratory Range	<ul style="list-style-type: none"> • Local population-level impacts, i.e., potential to reduce local population below self-sustaining. • Long term loss or impairment of substantial portion of local habitat (species dependent).

Table 3.1-1 (Continued)

Area of Concern	Spatial Boundary	Threshold of Concern: ^B Alternative 1 or 2 would cause or result in:
Biological Resources: Threatened or Endangered Species	Home range or protected habitat	<ul style="list-style-type: none"> • USFWS Jeopardy Opinion. • Reduction of State of Maryland RT&E Species habitat. • Statistically significant decline in reproductive success (or other appropriate population metric), and/or • Direct mortality or other unpermitted “take” of T&E species.
Biological Resources: Wetlands	Installation boundary	<ul style="list-style-type: none"> • Violation of Section 404 of the Clean Water Act (unpermitted deposition of dredged or fill material into a wetlands or other “waters of the U.S.”). • Net loss of wetlands within installation boundary (unmitigated).
General Compliance	Installation Boundary or Limits of Affected Environmental Media	<ul style="list-style-type: none"> • Violations of federal or state environmental rules regulations, or permits held by the installation.
<p>^A Although some thresholds have been so designated based on legal or regulatory limits or requirements, others reflect discretionary judgment and BMPs on the part of the Army and Forest Service in accomplishing their primary missions of military readiness and management of National Forest lands (including multiple use and access), respectively, while also fulfilling their conservation stewardship responsibilities. Quantitative/qualitative analysis may be used, if appropriate, in determining whether, and the extent to which, a threshold is exceeded.</p> <p>^B Thresholds listed are for potential effects of the alternative prior to or without mitigation.</p>		

3.2 LAND USE

Natural land uses and land uses that reflect human-caused modifications are considered in this section. Natural land use classifications include wildlife areas, forests, and other open or undeveloped areas. Human land uses include residential, commercial, industrial, utilities, agricultural, recreational, and other developed uses.

Master planning of Army Installations is guided by AR-210-20. There are typically 12 general land use classifications used by Army planners and they include: airfields, maintenance, industrial, supply/storage, administration, training/ranges, unaccompanied personnel housing, family housing, community facilities, medical, outdoor recreation, and open space. Management plans, policies, ordinances, and regulations determine the types of uses that are allowable, or protect specially designated or environmentally sensitive uses (Figure 3.2-1). Table 3.2-1 lists the land use area along with the amount of acreage associated with that land use on FGM.

Table 3.2-1 Land Use Acreage

Land Use	Acreage*
Housing	1012 acres
Supply and Storage	22 acres
Administration	2112 acres
Community Facilities	342 acres
Open Space	1113 acres
Industrial	480 acres
Medical	20 acres
Outdoor Recreation/Golf Course	405 acres
* approximate	

3.2.1 Affected Environment

The following information was derived from the *Integrated Natural Resources Management Plan, Fort Meade 1999-2004*.

The primary land use at Fort Meade is to support DoD training, serve as a federal campus, provide leadership in base operations supporting tenant activities, which include all services, Department of Defense activities, and federal agencies.

All other land uses are secondary. To the extent practicable and consistent with the various federal, state and local regulatory agencies and resource management plans, as many secondary land uses as possible will be made available.

FGGM comprises approximately 5,506 acres in Anne Arundel County located in the central portion of Maryland. The mission of FGGM is to provide leadership in Base operations supporting tenant activities, which includes all services, Department of Defense activities, and Federal agencies. The installation also provides for the quality of life of the service members and families, civilian workforce and retirees within the FGGM community.

FGGM is located approximately halfway between Baltimore, MD and Washington, DC. MD Rt. 32 borders the western portion of the installation. Along the south the installation shares a border with the Patuxent Research Refuge. The eastern border is MD Rt. 175 and to the north is Interstate 295. The installation is situated on 5,506 acres of land, consisting of the main Administrative area, seven family housing areas, the National Security Agency complex, an industrial/maintenance area, the exchange mall complex, a 36 hole golf course, and [Kimbrough Ambulatory Care Center](#).

Many of FGGM's neighboring communities are relatively small. According to the United States Census Bureau (2000 Census), populations of the surrounding communities are Laurel, Maryland (pop.19,960) and Odenton, Maryland (pop. 20,537).

3.2.2 Environmental Consequences

Preferred Alternative: The Preferred Alternative will have no measurable impact since there would be no change in existing land use plans and policies or interference to emergency response. Also, since the pest management activities are generally scheduled, other activities can be planned accordingly.

No Action Alternative: There would be no changes to the land use or land use plans as the result of the No Action Alternative.

3.3 AIR QUALITY

Air quality in a given location is described by the concentrations of various pollutants present in the atmosphere. National Ambient Air Quality Standards (NAAQS) have been established by the EPA for six criteria air pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter equal to or less than 10 micrometers in diameter (PM₁₀), ozone (O₃), and lead (Pb). NAAQS represents the maximum levels of background pollutants that are considered safe, with an adequate margin of safety to protect public health and welfare. Short-term standards (1-hr, 8-hr, and 24-hour periods) have been established for pollutants

contributing to acute health effects, while long-term standards (annual averages) have been established for pollutants contributing to chronic health effects.

The Clean Air Act (CAA) of 1990 places the responsibility on individual states to achieve and maintain the NAAQS. The primary mechanism for states to achieve and maintain the NAAQS is the EPA-required State Implementation Plan (SIP). The SIP identifies goals, strategies, schedules, and enforcement actions that will lead each state into compliance with NAAQS. Each state has the authority to adopt standards stricter than those established under the federal program.

The EPA may designate any area throughout the country as attainment (air quality is in compliance with the NAAQS) or as non-attainment (air quality violates the NAAQS). When there is insufficient ambient air quality data for the EPA to form a basis for attainment status, the area is designated "unclassified." The criteria for non-attainment designation varies by pollutant: 1) an area is in non-attainment for O₃ if NAAQS have been exceeded more than three discontinuous times in three years, and 2) an area is in non-attainment for any other pollutant if NAAQS have been exceeded more than once per year. Maryland AAQS and the federal NAAQS are depicted in Table 3.3-1.

Table 3.3-1 National and State Ambient Air Quality Standards

Air Pollutant	Averaging Time	MD AAQS ¹	Federal (NAAQS)	
			Primary ²	Secondary ³
CO	1-hour	35 ppm	35 ppm	35 ppm
	8-hour	9 ppm	9 ppm	9 ppm
NO ₂	Annual	0.053 ppm	0.053 ppm	0.053 ppm
SO ₂	3-hour	0.50 ppm	0.14 ppm	0.50 ppm
	24-hour	0.14 ppm		
	Annual	0.03 ppm	0.03 ppm	
PM _{2.5} ⁴	24-hour	65 µg/m ³	65 µg/m ³	150 µg/m ³
	Annual	15 µg/m ³	15 µg/m ³	50 µg/m ³
PM ₁₀	24-hour	150 µg/m ³	150 µg/m ³	150 µg/m ³
	Annual	50 µg/m ³	50 µg/m ³	50 µg/m ³
O ₃	1-hour ⁵	0.12 ppm	0.12 ppm	0.12 ppm
	8-hour	0.08 ppm	0.08 ppm	0.08 ppm
Pb	Quarterly average	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³

¹ Maryland has adopted all NAAQS.
² Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly.
³ Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.
⁴ PM_{2.5} = Particulate matter less than 2.5 microns in diameter. New standards for PM_{2.5} and 8-hour ozone standards were established in 1997; guidelines are being drafted.
⁵ The ozone 1-hour standard applies only to designated non attainment areas.
 ppm = parts per million
 µg/m³ = micrograms per cubic meter.

Source: EPA/MDE 2005

3.3.1 Affected Environment

Air quality for this locality is in compliance with the NAAQS with the exception of Ozone (O₃). Large parts of Maryland are nonattainment for ozone including Central Maryland, the Baltimore Metropolitan region, the Washington Metropolitan region, part of Southern Maryland and part of the Eastern Shore. The FGGM area is found to be in an attainment area for all other primary pollutants. Ft Meade is major source for total NO_x, and has a Synthetic Minor CAA Operating Permit issued by the Maryland Department of Environment (Permit # 003-00322) which limits the installation's emissions to below 25 tons per year (the threshold for major source level). Most air pollutants generated at FGGM are the result of transitory sources, such as fugitive dust from vehicles and vehicle exhaust emissions. Exempted emissions are mainly fugitive dust from vehicles. The MDE is the state agency responsible for regulating emissions of hazardous air pollutants at FGGM with rules promulgated by the EPA.

3.3.2 Environmental Consequences

Preferred Alternative: Temporary and minor site-specific negative impacts would occur as a result of implementation of pest control techniques such as mechanical removal. Chemical application would result in a limited amount of pesticide released into the air. All hand spraying would be performed in accordance with the manufacturer's label and EPA approved guidance to reduce the airborne drift. Pesticide applications would be made during weather conditions

suitable for optimal effectiveness. There is no regular aerial application of chemicals identified in the plan. Any future aerial application programs would be coordinated and approved by the Army Environmental Center, Major Command pest management coordinator or Installation Management Agency regional pest management coordinator, and appropriate local officials. No significant impacts would occur to the air quality of the areas surrounding FGGM. Since the impacts are temporary and the air quality will revert back to its original condition prior to the pest control application, the action cannot be cumulatively added to other past, present, or future actions to create a significant impact.

No Action Alternative: Existing pest management practices would remain the same, resulting in a minor negative impact on air resources.

3.4 NOISE

Noise is considered unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may involve a broad range of sound sources and frequencies, or it can have a specific, readily identifiable source. There is a wide diversity among human responses to noise that vary not only according to the type and characteristics of the noise source, but also to the sensitivity and expectations, the time of day, and the distance between the noise source (i.e., aircraft or equipment) and the receptor (i.e., a person or animal). Behavioral and physiological responses have a potential to cause stress and health problems or injury in humans and wildlife. The effects of noise can be immediate or latent as a result of long-term exposure. There is a strong tendency for species to acclimate or habituate to a repetitive noise disturbance.

The Federal Interagency Committee on Urban Noise has developed land use guidelines for areas on or near noise-producing activities, such as highways, airports, and firing ranges. FGGM uses these guidelines in their Installation Compatible Use Zone (ICUZ) program to designate noise zones for land use planning. The program considers the land areas, with noise-sensitive land uses, that are exposed to generally unacceptable noise levels. Noise-sensitive land uses include residences, schools, medical facilities, and churches.

3.4.1 Affected Environment

The sources of noise at FGGM are both natural (i.e. wind, rainfall, movement of vegetation, and animal activities) and man-made (i.e. vehicular traffic, industrial, powered equipment, and small arms fire used for training) and vary by area and activity. Noise receptors at FGGM include humans and wildlife.

3.4.2 Environmental Consequences

Preferred Alternative: The Preferred Alternative will have minor/temporary site-specific increases in noise levels if powered equipment or bird control noise devices are used for outside pest management practices. This would result in a minor/temporary site-specific negative impact but negligible cumulative impact. This alternative is not likely to generate noise that would conflict with federal, state, or local noise standards or create noise levels incompatible with existing or proposed land use. Since the impacts are temporary and the noise level will revert back to its original level, the action cannot be cumulatively added to other past, present, or future actions to create a significant impact.

No Action Alternative: Continuation of existing pest management practices would not change the current situation on noise generated at FGGM.

3.5 GEOLOGY AND SOILS

The effects of pest management vary throughout the U.S. depending on the geological composition of soils and topographic features in a particular area. Topography is the change in vertical relief (elevation) over the surface of a land area. The topography of an area may be influenced by human activity, underlying geologic material, seismic activity, climatic conditions and erosion. The surface geology of the U.S. is diverse and reflects the erosion and deposition processes that have predominated North America. Soils play a critical role in both the natural and human environments. Soil is the medium in which plants are anchored and from which they draw water and mineral nutrients. Soil is derived from complex interactions of geologic, biotic, and climatic factors acting over time. Soil structure, elasticity, strength, shrink-swell potential, corrosivity and erodibility all determine the ability for the ground to support man-made structures and facilities. Soils typically are described in terms of their complex type, slope, physical characteristics and relative compatibility or constraining properties with regard to particular construction activities and types of land use. Soils are also categorized by particle size and fertility with regard to agricultural and horticultural characteristics.

3.5.1 Affected Environment

The following information was derived from the *Integrated Natural Resources Management Plan, Fort Meade 2004*.

Fort Meade is located in Anne Arundel County, midway between Baltimore, Maryland, and Washington, D.C. The Anne Arundel County Seat is approximately 14 miles southeast of the post in Annapolis, Maryland. The Little Patuxent River runs along a part of the southwest corner of the facility and two of its tributaries, Midway Branch and Franklin Branch, flow south through the post. FGGM is located in the Chesapeake Bay watershed.

Fort Meade has approximately 210 feet of topographic relief. The highest point, 310 feet mean sea level (msl), occurs at the First Army Radio Station Tower, located in the northern-most central portion of the installation. The lowest elevation, under 100 feet msl, occurs in the southwestern corner of FGGM, along the Little Patuxent River.

Most of the installation slopes gradually to the south and southwest. Slopes exceeding 10 percent are rare and occur primarily in pockets in the north-central and central part of the installation and along stream corridors. The southern half of FGGM contains gradual slopes, generally less than 6 percent.

FGGM is in the Atlantic Coastal Plain Physiographic Province. It is underlain by a wedge-shaped mass of unconsolidated sediments that thickens to the southeast. The unconsolidated sediments overlie crystalline rock of Precambrian to early Cambrian age.

The crystalline substrate underlying FGGM consists of gabbro, diorite, and other igneous and metamorphic rocks. The surface of these rocks dips to the southeast and acts as a lower confining layer for the Potomac Group. The premise that the crystalline rock acts as a confining layer is the result of the low conductivity of similar crystalline rocks in the Maryland Piedmont (Mach and Achmad, 1986).

The series of thick, unconsolidated sediments underlying Anne Arundel County are subdivided (from oldest to youngest) into the Potomac Group, Magothy Formation, and Patuxent River terraces and associated alluvium. The Potomac Group contains five geological units, three of which underlie FGGM: the Arundel Clay, the Patuxent Aquifer, and the Lower Patapsco Aquifer. The Arundel Clay is a unit with low vertical hydraulic conductivity and is the confining layer between the two aquifers under FGGM. It is visible in northern Anne Arundel County and consists of red, brown, and gray clay with some ironstone nodules and plant remains (Mach and Achmad, 1986).

Above the Lower Potomac Aquifer is an unnamed confining layer composed of tough variegated clay that generally exhibits low vertical hydraulic conductivity. There are, however, layers within the confining layer that are permeable. Alluvium underlies all of the rivers, streams, and marshes of FGGM and consists of interbedded sand, silt, and clay with small gravel inclusions.

The Fort George G. Meade Soil Survey (Natural Resources Conservation Service, 1995) identifies 39 distinct soil mapping units on FGGM. Most of the soil is part of an Evesboro complex. Evesboro soil is very deep, excessively drained sandy loam soil on uplands.

Table 3.5.1-1 lists the soil units identified at FGGM and characterizes them by slope percent, soil erodibility (K factor), whether they are HEL, and their limitations to development. The percentage of the site covered by each type of soil is also shown. The soil erodibility or K factor refers to the soil's susceptibility to water erosion. A high K factor indicates a greater susceptibility. The Anne Arundel County Code, § 2-101 (22E), defines soil in highly erodible lands (HEL) as soil with a slope greater than 15 percent and soil with a K value greater than 0.35 and with slopes greater than 5 percent. With the exception of three soil map units (Muirkirk Loamy Sand 15 to 30 percent, Keyport Sandy Loam, and Evesboro and Galestown Loamy Sand 10 to 25 percent), FGGM soil is not classified as HEL.

Development limitations on FGGM are defined primarily by slope and areas of wetness caused by seasonal high water. Soil having "severe" limitations to development is generally unfavorable for the construction of small commercial buildings. Soil having "moderate" building limitations exhibits few constraints, whereas soil having "slight" building limitations has little or no development constraints. In all cases, sites should be evaluated individually to determine the extent of development limitations specific to that location.

TABLE 3.5.1-1
 Types and Selected Physical Characteristics of Soil Found at Fort George G. Meade, Maryland

Map Symbol	Map Unit Name	Slope Percent	K Factor	HEL*	Development Limitation for Small Commercial Buildings	Percentage of Site
Bm	Bibb-luka Silt Loams	Nearly level	0.37	N	Severe: flooding, wetness	4.7
DoB	Downer Loamy Sand	2 to 5	0.20	N	Slight	2.1
DoC	Downer Loamy Sand	5 to 10	0.20	N	Moderate: slope	1.4
DoD	Downer Loamy Sand	10 to 15	0.20	N	Severe: slope	0.8
DrB	Downer-Urban Land Complex	0 to 5	0.32	N	Slight	4.0

TABLE 3.5.1-1
 Types and Selected Physical Characteristics of Soil Found at Fort George G. Meade, Maryland

Map Symbol	Map Unit Name	Slope Percent	K Factor	HEL*	Development Limitation for Small Commercial Buildings	Percentage of Site
DwB	Downer Sandy Loam	2 to 5	0.32	N	Slight	0.2
DwC	Downer Sandy Loam	5 to 10	0.32	N	Moderate: slope	0.2
DwD	Downer Sandy Loam	10 to 15	0.32	N	Severe: slope	0.0
EoB	Evesboro Loamy Sand	0 to 5	0.20	N	Slight	9.6
EsC	Evesboro and Galestown Loamy Sands	5 to 10	0.20	N	Moderate: slope	7.2
EsE	Evesboro and Galestown Loamy Sands	10 to 25	0.20	P	Severe: slope	1.8
EuB	Evesboro-Urban Complex	0 to 5	0.20	N	Slight	11.1
EuD	Evesboro-Urban Complex	5 to 15	0.20	N	Severe: slope	12.1
Fa	Fallsington Sandy Loam	Mostly level	0.24	N	Severe: wetness	4.0
HbB	Hambrook Sandy Loam	2 to 5	0.28	N	Slight	1.4
HbC	Hambrook Sandy Loam	5 to 10	0.28	N	Moderate: slope	1.2
HrB	Hammonton-Urban Land Complex	0 to 5	0.32	N	Moderate: wetness	0.2
InA	Ingleside Sandy Loam	0 to 2	0.20	N	Slight	0.0
InD	Ingleside Sandy Loam	10 to 15	0.20	N	Severe: slope	0.1
KeC	Keyport Sandy Loam	5 to 10	0.37	Y	Moderate: wetness, shrink-swell, slope	0.5
KpA	Keyport Silt Loam	0 to 2	0.43	N	Moderate: wetness, shrink-swell	0.9
KpB	Keyport Silt Loam	0 to 5	0.43	N	Moderate: wetness, shrink-swell	2.7
KrB	Keyport-Urban Complex	0 to 5	0.43	N	Moderate: wetness, shrink-swell	2.2
MyD	Muirkirk Loamy Sand	10 to 15	0.17	N	Severe: slope	0.3
MyE	Muirkirk Loamy Sand	15 to 30	0.17	Y	Severe: slope	0.0
MzB	Muirkirk-Urban Complex	0 to 5	0.17	N	Slight	5.3
MzD	Muirkirk-Urban Complex	5 to 15	0.17	N	Severe: slope	1.2
RcB	Runclint Sand	0 to 5	0.10	N	Slight	0.4
SaB	Sassafras Sandy Loam	2 to 5	0.28	N	Slight	0.2
SaC	Sassafras Sandy Loam	5 to 10	0.28	N	Moderate: slope	0.5
SaD	Sassafras Sandy Loam	10 to 15	0.28	N	Severe: slope	0.3

TABLE 3.5.1-1
 Types and Selected Physical Characteristics of Soil Found at Fort George G. Meade, Maryland

Map Symbol	Map Unit Name	Slope Percent	K Factor	HEL*	Development Limitation for Small Commercial Buildings	Percentage of Site
SnB	Sassafras-Urban Complex	0 to 5	0.28	N	Slight	1.8
SnD	Sassafras-Urban Complex	5 to 15	0.28	N	Severe: slope	3.0
UdB	Udorthents	0 to 5	0.20	N	Severe: wetness	4.3
UdD	Udorthents	5 to 15	0.20	N	Severe: wetness, slope	0.7
UfD	Udorthents, Landfill	5 to 15	0.2	NA	NA	2.1
Ur	Urban Land	NA	NA	N	Variable	8.0
WdA	Woodstown Sandy Loam	0 to 2	0.32	N	Moderate: wetness	1.8
WdB	Woodstown Sandy Loam	2 to 5	0.32	N	Moderate: wetness	0.7

Source: Fort George G. Meade Soil Survey (National Resources Conservation Service, 1995).

*HEL are highly erodible lands as defined in the Anne Arundel County Code § 2-101 (22E).

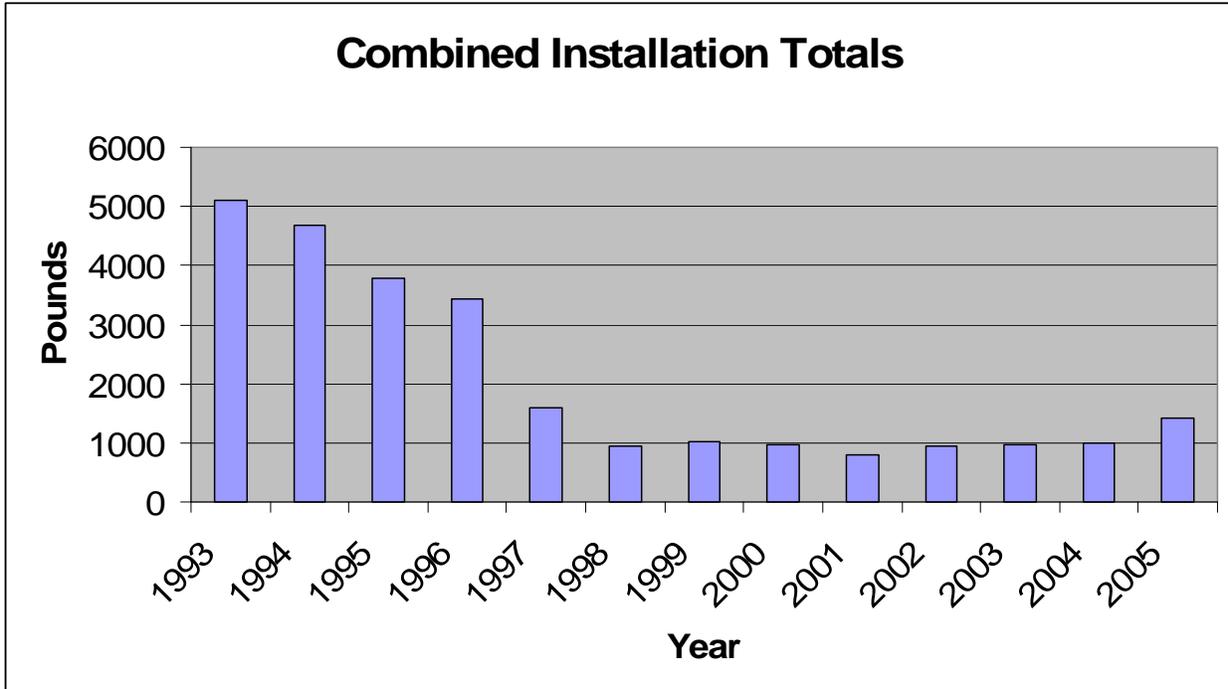
Key: Y = Yes, soil is HEL
 N = No, soil is not HEL
 P = Potential, soil is potentially HEL
 N/A = Not available

Water covers 0.8 percent of the site.

3.5.2 Environmental Consequences

Preferred Alternative: The proposed action would have initial minor negative impacts on the geology and soils. Mechanical weed removal may result in an increase in soil erosion, and there is a possible risk of soil contamination from pesticide applications. Those areas that are impacted by increased soil erosion will be reseeded with native seed stocks. Only pesticides that are the least-toxic will be used under the IPMP. A list of proposed pesticides is presented in Table 3.12.1-1. The chemicals used in many of the pesticides will bind to soil particles where they are broken down by aminomethylphosphoric acid and further broken down by microorganisms. The length of time it takes for the chemicals to break down varies depending on the pesticide formulation, soil texture and organic matter content. Because of the limited use, low toxicity, and rapid decomposition of the chemicals, pesticides would only have a minor impact to the soils and no impact to the geology. An integrated approach to pest management would reduce the potential for soil contamination compared to existing practices by reducing the quantities of pesticides used and result in a minor cumulative positive impact.

No Action Alternative: The No Action Alternative is not an integrated method and would be anticipated to use more pesticides. Therefore, it would have a negative impact on the soils as repeated outdoor applications of pesticides can cause an accumulation of residues to build up, leading to potential soil contamination. A chart showing the pounds of active ingredients applied by year for the past twelve years is presented below.



3.6 WATER RESOURCES

The water resources at FGGM addressed in this EA include surface and groundwater resources. Surface water includes ponds, lakes, streams, rivers, bays, and oceans and is important for economics, ecology, recreation and human health considerations. Runoff from precipitation and human activities flows into surface waters, which usually flows into larger water bodies and eventually into the ocean. A watershed includes the entire region contributing to the supply of a river or lake. Two different avenues from which pollutants can reach these water resources are run off and waste water discharge. Groundwater is the supply of water found beneath the earth's surface, usually in aquifers, which is often used to supply wells and springs. Depth to groundwater, rate of groundwater movement, permeability of overlying soils, and uses of groundwater are all site-specific factors that are used to assess local groundwater vulnerability and susceptibility to contamination. In some regions, the quantity, in addition to the quality of groundwater available is an issue for consideration.

3.6.1 Affected Environment

The entire FGGM property eventually drains to Little Patuxent River. There are three primary tributaries. Midway Branch and Franklin Branch drain the west and east portions of the base respectively, joining south of the base and eventually entering Allen Lake (formerly known as "Soldier's Lake) south of Route 32. The third tributary consists of two small, unnamed branches that join before entering the Little Patuxent River. This tributary drains the NSA and the southwest portion of the base. With the exception of several stormwater management ponds, Burba Lake is the only enclosed water body on the base.

Water resources are described in this report and managed on a subwatershed basis. FGGM has been divided into 20 subwatersheds: 9 along Midway Branch, 8 along Franklin Branch, and 3 draining the southwest portion of the post, including NSA. Not included are the extreme northwest and northeast corners of the post. The northwest corner drains to the west and eventually enters the Little Patuxent River offsite. The northeast corner drains to a tributary of the Severn River. The FGGM property is approximately 5,506 acres.

Site visits were conducted June 15-19, 1998, to assess the current conditions of the streams and watersheds. Descriptions of the findings are provided below by stream. Water quality, overall stormwater management, and groundwater resources are also described.

Midway Branch drains 1,386 acres of FGGM. Midway Branch also drains approximately 290 acres offsite to the north. The stream is generally undergoing significant aggradation and degradation along the upper reaches, while the lower part appears to be relatively healthy.

The Franklin Branch watershed is divided into eight subwatersheds. It originates as an intermittent stream in the vicinity of Meade Senior High School in the northeast portion of the base, flowing generally in a southerly direction to Burba Lake. Exiting Burba Lake, Franklin Branch flows to the southwest, joining Midway Branch, and exiting the post at the south central border. Franklin Branch drains 1,163 acres of the post.

Two unnamed tributaries to the Little Patuxent River are located in the southwest portion of the post, south of the NSA campus and north of Tipton airfield. They join prior to flowing into the Little Patuxent River.

Water quality at FGGM is regulated by the MDE under Maryland Title 33, Part IX-Water Quality Regulations, Chapter 11. This regulation establishes water quality criteria as well as use designations. Surface water quality at FGGM is within criteria established by the state of Maryland.

Groundwater is the major potable water source for FGGM. Several freshwater aquifers have been identified at FGGM's Main Post. Some of the aquifers are located in saturated sand and gravel beds near the ground surface while others are at considerable depth.

Wetlands

The Army Corps of Engineers and EPA define wetlands as: "Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." The three parameters used to determine whether an area is a wetland or not are vegetation, soil, and hydrology.

The Army's policy for wetlands calls for the avoidance of negative impacts to aquatic resources caused by filling, flooding, draining, sedimentation, water quality degradation, increased noise, or human activity, and to mitigate any unavoidable adverse impacts. The Army strives to avoid the loss of values and functions in existing wetlands and prevent an overall loss of wetlands on federal land.

In 1991, the federal legislature adopted a policy of "no net loss" of state-owned wetlands and authorized a state wetlands conservation management plan. Also in 1991, the legislature adopted the Clean Rivers Act, which directed the river authorities to conduct a regional assessment of water quality for each major river basin, with the CEQ overseeing the effort.

NEPA requires that projects be evaluated for possible impacts on wetland areas. In most cases, the DPW Environmental Management Office (DPWEMO) makes the initial evaluation. Projects with potential impacts are referred to the Army Corps of Engineers to determine whether jurisdictional wetlands could be affected and to establish mitigation procedures. Coordination under the Clean Water Act (CWA) is conducted as required.

Wetland areas on FGGM include man-made impoundments, beaver ponds, riparian areas and scattered plant bogs.

3.6.2 Environmental Consequences

Preferred Alternative: Minor positive impacts to water resources will occur if chemical and non-chemical pest control techniques are properly applied as well as reseeding is done in weed removal areas. Proper application of the applicable pesticide according to the label, target pests, and environmental features eliminate the chance of material reaching any groundwater or surface water resources. Section 7. of the IPMP sets forth verbiage whereby all pest management activities avoid adversely affecting surface water, floodplains, and groundwater. Those actions that have the potential to impact water resources would be coordinated with the FGGM natural resource manager before implementation. Appendix I of the IPMP outlines clean-up procedures if any accidental pesticide spills occur so that run-off to any water resource area is avoided or reduced as much as possible. To minimize potential impacts, buffer zones (generally 100 feet) around water resource areas would be implemented and no activities, such as the mechanical removal of pests or the application of aquatic herbicides, would occur in these areas unless specifically approved and/or permitted by the agency with legal jurisdiction. No pesticides would be applied around water resources except when in accordance with manufacturer's label and EPA guidance.

Implementation of the IPMP at FGGM could have minor, positive site-specific impacts on wetlands. Buffer zones (generally 100 feet) around wetlands would be established and no activities would occur in wetlands or unless specifically in accordance with manufacturer's label and EPA guidance.

Minor impacts to floodplains, such as erosion and soil and water contamination, could occur if chemical and non-chemical pest control techniques are improperly applied. To minimize potential impacts, buffer zones (generally 100 feet) around floodplains would be implemented and no activities, such as the mechanical removal of pests or the application of aquatic herbicides, would occur in floodplains unless specifically approved by the agency with legal jurisdiction. No pesticides would be applied in floodplain areas except when in accordance with manufacturer's label and EPA guidance.

No Action Alternative: The No Action Alternative would maintain existing practices with respect to pest management and its impacts on surface water and groundwater. This alternative will have a negative impact on water resources because it is not an integrated method and would be anticipated to use more pesticides. Repeated outdoor applications of pesticides can cause residues to build up, leading to potential water contamination.

3.7 BIOLOGICAL RESOURCES

The biological resources at FGGM consist of all plant and animal species and their habitats in relation to the installation. Recognition and preservation of the biological resources at FGGM provides environmental value, as well as recreational and aesthetic value. The biological resources discussed in this EA include ecological regions, threatened or endangered species. The information in this section was derived from the *Integrated Natural Resources Management Plan, Fort Meade 2004*.

3.7.1 Affected Environment

Ecological Regions

An ecoregion is an area defined by its climate, physical characteristics, and the plants and animals that are able to live there. Ecoregions contain many landscapes with different spatial patterns of ecosystems. There are fourteen ecoregions defined within Maryland with many extending into adjoining states and some beyond. FGM lies within region 65, the Southeastern Plain or Upper Coastal Plain. The Upper Coastal Plain includes the area that is west of the Chesapeake Bay and the Elk River, and continues westward to the higher elevations of the Piedmont at a geologic feature called the Fall Zone or Fall Line. This is an irregular line that roughly runs along Interstate 95. From its western edge, the Upper Coastal Plain generally grades downward to sea level at the waters of Chesapeake Bay, although occasional cliff formations are found along the Chesapeake Bay shoreline.

Natural vegetation is mostly oak-hickory-pine and Southern mixed forest. The Cretaceous or Tertiary-age sands, silts, and clays of the region contrast geologically to the older igneous and metamorphic rocks of the Piedmont, and the older limestone, chert, and shale found in the Interior Plateau. Streams in this area are relatively low-gradient and sandy-bottomed

Flora

Extensive development at FGM has resulted in the retention of few areas of native vegetation on the post, most of which are associated with stream corridors. The largest wooded area on the post is in the southwest corner and is associated with the Little Patuxent River. The dominant vegetation in this area is red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*), black gum (*Nyssa sylvatica*), northern arrowwood (*Viburnum recognitum*), Japanese honeysuckle (*Lonicera japonica*), greenbriar (*Smilax rotundifolia*), and poison ivy (*Toxicodendron radicans*).

Smaller wooded areas are scattered throughout the post, in the uplands. They are dominated by white, red, and chestnut oak (*Quercus prinus*); mockernut and pignut hickory (*Carya tomentosa* and *Carya glabra*); flowering dogwood (*Cornus florida*); blueberry (*Vaccinium corymbosum*); greenbriar; loblolly and pitch pine (*Pinus taeda* and *Pinus rigida*); and poison ivy.

Most of the developed portions of FGM have been landscaped using a combination of turfgrasses, interspersed with native and exotic trees and shrubs, including elm (*Ulmus* sp.), maple (*Acer* sp.), flowering cherry (*Prunus* sp.), black willow (*Salix nigra*), flowering dogwood (*Cornus florida*), and an assortment of holly cultivars (*Ilex* sp.) (CH2M HILL, 1996).

Fauna

There is no comprehensive species list that is current and ground proofed for the installation. However, because of the developed nature of the post and the lack of a wooded corridor throughout the post, it can be assumed that the wildlife species found at FGM are typical of those found in most urban-suburban areas. White-tailed deer frequent the post, especially along the Little Patuxent River. Other mammals that may be found on FGM include gray squirrel, raccoon, opossum, eastern chipmunk, field mouse, vole, mole, whitetail deer, woodchuck, small brown bat and fox (CH2M HILL, 1996).

Common birds on the sites would be limited to those that have adapted to an urban-suburban existence, such as American robin, catbird, mockingbird, Carolina chickadee, Carolina wren, house wren, downy woodpecker, common flicker, European starling, house sparrow, rock dove, mourning dove, and song sparrow. Other species, including warblers and raptors may be found on the post during migrations. Large numbers of these two species groups are probably not breeding on the post, however, because of the limited habitat available.

DNR performed the first fish survey of Burba Lake in 1995. The most abundant species were bluegill and pumpkinseed. Table 6-2 lists all of the fish collected during this survey. DNR noted an abundance of smaller-sized game fish, suggesting reproductive success in the existing populations. An absence of larger-sized game fish was also noted, suggesting fishing pressures were high. DNR suggested that FGGM implement stricter fishing regulations to improve the existing fishery. DNR also stocked the pond in 1995 with channel catfish, redear sunfish, and hybrid (bluegill x green) sunfish for the intended harvest during spring and fall fishing tournaments (USACE and ERM, 1996a).

Threatened and Endangered Species

The 1973 Endangered Species Act (ESA) requires FGGM to conserve any threatened and endangered species found within its property. Section 7 of the ESA requires federal agencies to consult with the United States Fish and Wildlife Service (USFWS) on any action that may affect endangered or threatened species or candidate species, or that may result in adverse modification of critical habitat. Critical habitats, as defined by the ESA, are areas with physical or biological features essential to the preservation of a species that may require special management or protection. Federal agencies are required to take precautions to not destroy or harm areas designated as critical habitat. The following considerations are made when determining critical habitat for a species: space for individual and population growth and normal behavior; cover or shelter; food, water, air, light, minerals, or other nutritional or physiological requirements; sites for breeding and rearing offspring; and habitats that are protected from disturbances or are representative of the historic geographical and ecological distributions of a species.

Except for occasional transient individuals, no federally listed or proposed endangered or threatened species are known to occur on FGGM (USFWS, 1996). Previous coordination with the Maryland Natural Heritage Program reports occurrences of a state-endangered fish, the glassy darter (*Etheostoma vitreum*), within the Patuxent River (MD DNR, 1993). In addition, the FGGM Integrated Natural Resources Management Plan (INRMP) includes nine plant species of state importance that may occur in or around FGGM. These include: shaved sedge, (*Carex tonsa*), Asa Gray's cyperus, (*Cyperus grayi*), Leavenworth's sedge (*Carex leavenworthii*), downy bushclover (*Lespedeza stuevei*), eastern sedge (*Carex atlantica*), dwarf azalea (*Rhododendron atlanticum*), small's ragwort (*Senecio anonymous*), purple chokeberry (*Aronia prunifolia*), and weak stellate sedge (*Carex seorsa*). Areas with the potential for state-protected species have been identified and no herbicides will be used in areas where drift might adversely impact the state-listed plants.

3.7.2 Environmental consequences

Preferred Alternative: Overall, implementation of the IPMP at FGGM would have a minor positive effect upon biological resources. The IPMP contains procedures whereby all pest management activities clearly define the target species and designate the specific actions to control those species. Pesticide types, amounts and application would be controlled in order to only treat a specific type of pest. No pest management operations would be conducted that have the potential to negatively affect endangered or protected species or their habitats without prior coordination with the USFWS. No pesticides would be applied within 100-feet of known State threatened or endangered species unless use in such a site is specifically approved by the USFWS or the MDNR.

Non-chemical management techniques and limited pesticide use may keep target species from developing a resistance to specific pesticides. Site-specific impacts would vary based on, among other things, the specificity of the pesticide and its persistence in the environment. Buffer zones (generally 100 feet) established around sensitive areas, including sensitive species habitat, pristine habitat, rivers and streams, and wetlands, would adequately protect these areas.

Non-chemical controls and limited pesticide use would not be expected to impact wildlife populations, other than the target species. The introduction of exotic species for pest control purposes is a non-chemical means of pest control that could potentially have a local impact on flora and fauna. In this instance, only biological materials approved by the U.S. Department of Agriculture or appropriate regulatory agency would be used. Any biological control used by FGGM would be coordinated with the appropriate federal and state officials. Protected migratory birds would not be controlled without coordinating with the appropriate federal and state officials.

No Action Alternative: The No Action Alternative would maintain existing practices with respect to pest management and its impacts on biological resources. It is possible for pests to develop a resistance to pesticides. As a result, there is the possibility of a minor negative cumulative impact on future pest management because it may be necessary to apply more pesticides in the future to obtain the same level of control. In addition, pesticides can bioaccumulate in animals eating the pests and plants that have been treated with pesticides and any increase in pesticide use could potentially result in an increase in the amount of pesticides bioaccumulated in those animals.

The No Action Alternative could adversely impact migratory birds by not supplying guidance to limit exclusion activities during periods of nesting. State RT&E species and their associated habitats may be impacted due to extensive herbicide use without an integrated approach.

3.8 CULTURAL RESOURCES

The United States has many sites of historic and archeological significance. The National Register of Historic Places (NRHP), maintained by the National Park Service, is the nation's official list of districts, buildings, sites, structures, and objects significant in American history, architecture, archeology, engineering, and culture. Currently more than 81,000 properties, including some United States Army (USA) facilities, are listed on the NRHP. Many other sites are potentially eligible to be placed on the NRHP. The information in this section was derived from the *Integrated Cultural Resources Management Plan, Fort Meade 2001 and recent projects that have affected cultural resources on the installation.*

3.8.1 Affected Environment

Potential eligible historical properties at FGGM consist primarily of buildings associated with the pre WWII era. The Post Core Historic District (4500 area), which includes 132 structures and a parade ground dating to the interwar years of 1919 to 1939, was determined by the 1994 CRMP to be eligible for the NRHP. To date, NRHP registration forms have not yet been prepared for the historic district. There are no buildings at FGGM that predate the establishment of the installation.

The current archeological inventory is as follows: A total of 30 archeological sites within FGGM have been identified, either in the 1995 Phase I survey or in subsequent investigations. Included among these sites are 4 historic cemeteries (that predate Army acquisition of the property), 11 historic period sites, 12 prehistoric sites, and 2 sites with both historic and prehistoric components. All of the prehistoric sites are located along upland terraces or ridges next to tributaries of the Little Patuxent River or Severn Run.

On the basis of the 1995 survey, 14 sites were considered to be potentially eligible for listing on the National Register of Historic Places (NRHP): 6 prehistoric sites (18AN974, 18AN975, 18AN978, 18AN986, 18AN989, and 18AN995); 6 historic domestic sites (18AN398-Loci A and B, 18AN982, 18AN983, 18AN973, 18AN987, and 18AN988); and a military training landscape site (18AN990). These sites appeared to have a high degree of integrity and to contain enough material to contribute significant information about prehistoric behavior or historic site development. The military training landscape site (18AN990) was considered potentially eligible because of its association with WWI and possibly WWII and its distinctive construction features. Phase II archaeological investigations were conducted in 2002 through 2004 and these sites are no longer eligible for the NRHP. A new site (18AN1240) was identified and added to the current archaeological inventory and it is NRHP eligible.

To protect sensitive resources from potential unauthorized collection of artifacts, the locations of these sites are not shown in any figures in this EA. The sites are depicted in the Phase I survey report and on Attachment A, the Environmental Constraints Map, which will be furnished to agencies and individuals with a validated need for this information.

3.8.2 Environmental Consequences

Preferred Alternative: Implementation of the FGGM IPMP will have a long-term minor positive impact by protecting and preserving any structure that is listed on, or is potentially eligible for listing on the NRHP from pests. Section D. of the IPMP outlines proper pest management in and around the buildings that would prevent any structural damage from animals and insects.

No Action Alternative: The No Action Alternative would maintain existing practices with respect to consideration of pest management and its impacts on cultural resources.

3.9 SOCIOECONOMICS

Socioeconomics are defined as attributes and resources related to the interaction of the human environment, population, and economic activity. Regional socioeconomic resources include employment, personal income and earnings, population, housing, and community services.

These elements are interrelated and do not normally react independently to changes in the regional economy.

3.9.1 Affected Environment

Since Fort Meade was established in 1917, population growth has fluctuated within the installation and its surrounding areas. The population fluctuations have been associated with changes in FGGM's mission. The 2000 census report estimated the Maryland population to be about 5,296,486. As of the 2000 census the FGGM population reached 9,902.

The FGGM installation contributes substantially to the local economy. The estimated total economic impact of FGGM on the region was more than \$2 billion for FY2004 (Maryland Department of Business and Economic Development, 2004). Payroll and retiree pay accounted for the largest percent of the total economic impact. The remaining amount can be contributed to contracts, utility expenditures (natural gas and electricity), major construction projects, supplies and equipment purchases, and aid to schools.

As of 2000, the medium household income (MHI) within Anne Arundel County was \$61,768, \$74,167 within Howard County, \$55,256 within Prince Georges County and \$52,868 for the state of Maryland. At national levels, the MHI was \$43,318. There were 2,862 housing units on FGGM in 2000 housing approximately 8,400 military dependents.

3.9.2 Environmental Consequences

Preferred Alternative: Implementation of an integrated approach to pest management is expected to produce a minor positive cumulative effect in the immediate vicinity of FGGM facilities by reducing noxious pest populations and should reduce the cost of the overall program due to the reduction of pesticide purchases.

No Action Alternative: The No Action Alternative would maintain existing conditions with respect to socioeconomics. No effect on population, employment, income, or housing is expected.

3.10 ENVIRONMENTAL JUSTICE

On 11 February 1994, President Clinton issued EO 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. The purpose of the order is to avoid disproportionate adverse environmental, economic, social, or health impacts from federal actions and policies on minority and low-income populations. As defined by the CEQ's guidance for addressing environmental justice, a minority is a person who identifies him or herself as Black, Asian or Pacific Islander, Native American or Alaskan Native, or Hispanic. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than the general population of the larger surrounding area. Low-income populations are identified using the U.S. Census Bureau's statistical poverty threshold that is based on income and family size. The U.S. Census Bureau defines a poverty area as a census tract where 20 percent or more of the residents have incomes below the poverty threshold and an extreme poverty area as a census tract with 40 percent or more of the residents below the poverty level.

3.10.1 Affected Environment

In 1999 about 5.1 percent of Anne Arundel County resident were classified as living below the poverty limit. The overall poverty level for the state of Maryland is 8.5 percent, 7.1 percent below the poverty rate for the United States (12.4 percent). The number of minority residents living in Anne Arundel County is 32 percent. The number of minority residents throughout the state of Maryland is approximately 40.3 percent of Maryland's population (MD QuickFacts/US Census Bureau).

3.10.2 Environmental Consequences

Preferred Alternative: Reducing noxious pest populations by implementing an integrated approach to pest management will have a minor positive effect on the local residents because there would be less health problems and lower health care costs.

No Action Alternative: The No Action Alternative would maintain existing conditions with respect to environmental justice. There would be no effect on minority or low-income populations at FGGM or neighboring communities.

3.11 PROTECTION OF CHILDREN

Executive Order 13045 seeks to protect children from disproportionately incurring environmental health or safety risks that might arise as a result of Army policies, programs, activities and standards.

3.11.1 Affected Environment

Many of the residents and visitors of FGGM are children. Out of concern for the safety of children, the Army takes precautions by a number of means, including, but not limited to, the use of fencing, limitations on access to certain areas, and provision of adult supervision. FGGM also has an educational program to promote children's health and safety among military family members. The FGGM installation has four elementary schools on-post, Manor View, Meade Heights, Pershing Hill and West Meade Elementary. The schools are for children living on-post in kindergarten through fourth grade with the exception of Meade Heights Elementary which also serves the surrounding community. There are two middle schools, McArthur and Meade Middle and one high school, Meade High. Children living off-post attend schools that serve the particular community which they are living within. According to the U.S. Census Bureau approximately 25.2 percent of Anne Arundel County residents were under the age of 18 in 2000 and approximately 25.6 percent of the entire state of Maryland's population was under the age of 18.

FGGM also has 5 Child Development Centers on the installation. These facilities serve both school age and pre-school age children.

3.11.2 Environmental Consequences

Preferred Alternative: Implementation of an integrated approach to pest management would protect children to the same or slightly improved degree from current pest management practices, thus producing no site-specific impact or a negligible site-specific impact to children at FGGM. USA facilities will adhere to guidelines that fall under AR 200-5 and AR 608-10, where there are Child Development Centers, Head Start, pre-school, or other similar programs. All pest management operations at the facility must be approved and inspected by a health consultant or safety officer (annually in accordance with the IPMP annual review and/or per

state requirements). All aspects of the pest management operation must be in accordance with the state's IPM guidelines, which states that herbicides are not to be used in outside children's play areas; and control treatments when children are in the facility are prohibited.

No Action Alternative: The No Action Alternative would maintain existing conditions with respect to the protection of children.

3.12 HAZARDOUS AND TOXIC MATERIALS/WASTES

Hazardous substances are generally materials that pose a threat to human health or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive. Regulations dealing with hazardous materials have specific regulatory definitions for hazardous materials, hazardous chemicals, hazardous substances, and so forth. Hazardous materials regulations require proper storage and handling of chemicals and require that spill contingency and response requirements related to hazardous materials be met.

Many pesticides are also hazardous materials and may persist in the environment long after they have been applied. Residual pesticides can adhere to indoor surfaces, affecting air quality. Repeated outdoor applications of a pesticide can cause residues to build up leading to potential soil, surface water and groundwater contamination, and bioaccumulation. Pesticide residues may be a health hazard when pesticides are applied near food storage or preparation areas. Pesticide labels contain application instructions and warnings about residues

The Federal Environmental Pesticide Control Act of 1972 amendments established a program for controlling the sale, distribution, and application of pesticides through an administrative registration process under the Administrator of the EPA. The amendments provide for classifying pesticides for general or restricted use. Restricted use means that the EPA has determined that the pesticide may have adverse effects on the environment, even when it is applied exactly according to label instructions. This damage may include injury to the pest manager or other people unless additional precautions are taken. Restricted-use pesticides may only be applied by or under the direct supervision of a certified applicator. Contractors used by the USA for pest management must have current certification for the types of applications to be performed. The law further stipulates that application of pesticides must not jeopardize the existence of threatened or endangered species (40 CFR 171.9 and 50 CFR 402).

Pesticide containers, wastes from pesticide mixing, and any material that comes in contact with the pesticides may be considered hazardous waste if it meets the EPA criteria. Any hazardous waste generated as a result of pest management activities requires disposal in accordance with label directions. Additionally, facilities are required to dispose of any pesticide, pesticide container, or pesticide residue in a manner consistent with labeling, not including open dumping or burning (40 CFR 165.7). The 1972 amendments authorize states to regulate the sale or use of any pesticide within a state, if such regulation does not permit any sale or use prohibited by the Act. State pesticide regulatory programs are to be at least as stringent as the Federal Insecticide, Fungicide and Rodenticide Act. State and local programs typically contain regulations that are tailored to an industry or activity that is prevalent or particularly sensitive in a state. Although DoD and Army regulations are generally more stringent, there may be cases where state and local pesticide regulations provide standards that are more stringent or specifically identify a requirement that may be qualitatively regulated under the federal program. State and local pesticide programs generally include regulations that address the following topics: restrictions or requirements for the sale, distribution, or use of selected pesticides; disposal requirements for excess pesticides and pesticide wastes, such as pesticide containers;

restrictions on the control of specific animal or insect species; specifications for bulk pesticide storage tanks or storage facilities; operational requirements for selected application methods; and record keeping and applicator certification requirements.

A typical USA facility might have small quantities of hazardous materials associated with bombing and gunnery ranges, motor pool, janitorial, and grounds maintenance activities. Materials might include ordnance, antifreeze, degreasing solvents, cleaners, fertilizer, and pesticides. Some pesticides are hazardous materials that require special management practices. Pesticides at USA facilities and training lands would be applied in accordance with specified procedures.

3.12.1 Affected Environment

The Maryland Department of Environment (MDE) is the primary regulatory agency for hazardous waste and hazardous materials at FGGM. USEPA Region 3 provides oversight to MDE, and both agencies have the authority to inspect and direct enforcement actions against the installation. Hazardous waste and materials handling, storage, and disposal must comply with Code of Maryland Regulations; Title 29 of the *Code of Federal Regulations* Part 1910 Subpart H; and Title 40 of the *Code of Federal Regulations*. Various post personnel, primarily through the DPWEMO, manage hazardous waste. The DPWEMO publishes a Hazardous Waste Management Plan that provides a standard operation for the collection, storage, transport, and disposal of hazardous waste.

All pesticides recommended for use in the FGGM IPMP are EPA as well as state registered pesticides. Pesticide registration is the process through which EPA examines the ingredients of a pesticide; the site or crop on which it is to be used; the amount, frequency and timing of its use; and storage and disposal practices. EPA evaluates the pesticide to ensure that it will not have unreasonable adverse effects on humans, the environment and non-target species. A pesticide cannot be legally used if it has not been registered with EPA's Office of Pesticide Programs. After a pesticide is registered by EPA, states can register pesticides under specific state pesticide registration laws. A state may have more stringent requirements for registering pesticides for use in that state. Ultimately, states have primary responsibility (called primacy) for pesticides used within state borders. Table 3.12.1-1 provides a list of pesticides proposed for use by the FGGM Integrated Pest Management Plan.

Common hazardous materials present at the installation include petroleum, oil, and lubricants (POLs); paint and paint-related material from paint shops and motor pools; flammable stains/coatings; cleaning products; photographic wastes; batteries; pesticides, insecticides, rodenticides, and herbicides; bomb propellants; smoke pots; flammable adhesives; solvents; calcium hypochlorite; flameless ration heaters (from Meals-Ready-to-Eat) and non-expended ammunition.

There are two 90-day hazardous waste storage sites on the installation. The Defense Reutilization Marketing Office, where most of the installation's hazardous waste is stored prior to off-site disposal, and the Department of Public Works HAZMART Complex which is managed by the DPW EMO.

The DPW originally established a Pest Management Plan for its facilities in 1993. This plan dictates that a certified supervisor tracks all records to meet DoD measures of merit for pounds used on all military facilities. Pesticides are substances or mixtures of substances intended to

prevent, destroy, repel, or mitigate pests. Table 3.12.1-1 lists the pesticides anticipated for use the installation.

Table 3.12.1-1 Proposed Pesticides for FGGM

Trade Name	Active Ingredient	Percent Active Ingredient	Formulation	EPA Signal Word	Half Life in Water	Half Life in Soil
Advance 388B	Borax	5.4	Bait	Caution	Not Available	Not Available
Advance Dual Choice	Sulfluramid	0.50	Bait Station	Caution	107 years	Not Available
Altosid	Methoprene	8.62	Briquets	Caution	30 – 40 hours	10 days
Arsenal	Imidezclinone	28.7	Liquid	Caution	4 days	25 – 141 days
Ascend G	Abamectin B1	0.011	Dust/Granule	Caution	4 days	8-21 days
Avert Roach Bait	Abamectin B1	0.05	Bait	Caution	4 days	8-21 days
Award	Fenoxycarb	1.00	Granular Bait	Caution	5 hours	1 day
Barren	Isooctyl	1.09	Solution	Not Available	15 days	14-300 days
Borid	Orthoboric Acid	99.0	Dust/Granule	Caution	Not Available	Not Available
BP 300 ULD/ULV	Pyrethrins	3.0	Solution	Not Available	Not Available	12 days
BP 100 ULD/ULV	Pyrethrins	1.0	Solution	Not Available	Not Available	12 days
B.T.I. Briquets	Bacillus thuringia	10.0	Other	Not Available	Not Available	Not Available
Caulking/Putty	Not applicable	Not applicable	Not applicable	Not Available	Not Available	Not Available
Combat Quick Kill 3	Fipronil	0.01	Bait Station	Caution	28 days	3 – 7.3 months
Combat Source Kill 4	Hydramethylnon	1.25	Bait Station	Caution	10 – 11 days	7 -28 days
Conrac	Bromadiolone	0.11	Bait packets	Caution	Not Available	1.8-7.4 days
Conrac Blox	Bromadiolone	0.005	Bait	Caution	Not Available	1.8-7.4 days

Table 3.12.1-1 Proposed Pesticides for FGGM - continued

Trade Name	Active Ingredient	Percent Active Ingredient	Formulation	EPA Signal Word	Half Life in Water	Half Life in Soil
Cy Kick	Cyfluthrin	0.10	Liquid Concentration	Caution	1 day	56 – 63 days
Cynoff	Cypermethrin	24.80	Emulsifiable Concentration	Caution	< 50 days	2 – 8 weeks
Cynoff WP	Cypermethrin	40.0	Suspension	Warning	< 50 days	2 – 8 weeks
Delta Dust	Deltamethrin	0.50	Dust	Caution	Not Available	1 -2 Weeks
Demand CS	Lambda Cyhalothrin	9.70	Liquid	Caution	Not Available	4 – 12 weeks
Demon TC	Cypermethrin	25.3	Emulsion	Warning	< 50 days	2 – 8 weeks
Demon WP	Cypermethrin	40.0	Suspension	Warning	< 50 days	2 – 8 weeks
Dragnet SFR	Permethrin	36.8	Emulsion	Caution	Not Available	30 days
Drax Liquidator Ant Bait	Boric Acid	1.00	Liquid Bait	Caution	Not Available	Not Available
Drione Dust	Pyrethrins	1.0	Dust/Granule	Not Available	Not Available	12 days
Dual Choice	P/sulfonamide	0.5	Bait	Caution	Not Available	1-25 weeks
Eco-2000-FB	Acephate	96	Bait	Warning	Not Available	0.5-3.0 days
Eco-2000-GR	Boric Acid	54.0	Bait	Caution	Not Available	Not Available
Eco-2000-RX	Boric Acid	50.0	Bait	Caution	Not Available	Not Available
Ecolab	Pyrethrins	0.975	Aerosol	Warning	Not Available	12 days

Table 3.12.1-1 Proposed Pesticides for FGGM - continued

Trade Name	Active Ingredient	Percent Active Ingredient	Formulation	EPA Signal Word	Half Life in Water	Half Life in Soil
Gentrol EC	Hydroxyurea	9.0	Emulsion	Not Available	Not Available	157 days
Gentrol IGR	Hydroxyurea	9.00	Emulsifiable Concentration	Caution	Not Available	Few Days
Gentrol Point Source	Hydroxyurea	90.6	Capsule device	Caution	Not Available	Few Days
Gourmet Ant Bait	DOT Borate	2.00	Liquid/Gel Bait	Caution	Not Available	Not Available
Kontrol 4-4	Permethrin	4.6	Solution	Caution	Not Available	30 days
MGK	Cyclopenten1	3.00	Solution	Not Available	Not Available	Not Available
Mach II	Halofenozide	2.00	Granules	Caution	Not Available	Not Available
Maki pellets	Benzopyran	0.005	Bait	Not Available	1-3 days	1-3 days
Martech	Diquat	4.35	Emulsion	Not Available	<48 days	<1000 days
MaxForce Ant Killer	Hydramethylnon	0.01	Bait Station	Caution	10 – 11 days	7 -28 days
MaxForce Carpenter Ant Bait	Fipronil	1.00	Bait Gel	Caution	28 days	3 – 7.3 months
MaxForce FC Stations	Fipronil	0.05	Bait Station	Caution	28 days	3 – 7.3 months
MaxForce FC	Hydramethylnon	0.05	Bait Station	Caution	10 – 11 days	7 -28 days
MaxForce Fine Granular Insect Bait	Hydramethylnon	1.00	Fine Granular Bait	Caution	10 – 11 days	7 -28 days
MaxForce Fly Bait	Imidacloprid	0.5	Bait	Not Available	Not Available	27-229 days
MaxForce Gel	Hydramethylnon	0.01	Bait	Caution	10-11 days	7-28 days
MaxForce Granular Insect Bait	Fipronil	1.00	Bait	Caution	28 days	3 – 7.3 months
MaxForce Roach Gel	Hydramethylnon	2.15	Other	Caution	10 – 11 days	7 -28 days
MaxForce Roach Killer	Imidacloprid	0.01	Bait Gel	Caution	31 days	48 – 190 days

Table 3.12.1-1 Proposed Pesticides for FGGM - continued

Trade Name	Active Ingredient	Percent Active Ingredient	Formulation	EPA Signal Word	Half Life in Water	Half Life in Soil
MaxForce Roach STA	Hydramethylnon	2.15	Bait	Caution	10 – 11 days	7 -28 days
Merit 0.5G	Boric Acid	1.00	Granules	Caution	Not Available	Not Available
Microcare CS	Pyrethrins	1.1	Aerosol	Caution	Not Available	12 days
Niban	Orthoboric Acid	5.00	Bait	Caution	Not Available	Not Available
Niban Granular Bait	Chlorfenapyr	0.50	Granular Bait	Caution	Not Available	1.4 years
Orthene PCO	Acephate	96.0	Bait	Warning	Not Available	0.5-3 days
Perma Dust	Boric Acid	35.5	Dust/Granule	Caution	Not Available	Not Available
Permethin XL Granules	Permethrin	0.25	Dust/Granule	Warning	5 days	30-38 days
Phantom	Chlorfenapyr	21.45	Suspension	Caution	28 days	3 – 7.3 months
PI Contact Insecticide	Pyrethrin	0.5	Aerosol	Caution	Not Available	12 days
Precor IGR	Methoprene	1.2	Solution	Caution	30-40 hours	10 days
Premise 75	Imidacloprid	75.00	Solution	Caution	31 days	48 – 190 days
Prevail	Metalaxyl	3.21	Granular	Caution	< 4 weeks	70 days
Prevail FT	Cypermethrin	24.8	Emulsion	Warning	<50 days	4-56 days
PT 515 Wasp Freeze	Allethrin Cyclo	0.13	Aerosol Spray	Caution	Not Available	Not Available
PT 565 XLO	Pyrethrin	0.25	Aerosol	Caution	Not Available	12 days
Round-up	Glyphosate	1.92	Emulsion	Warning	12-70 days	47 days
Roundup Pro	Glyphosate	41.00	Liquid	Caution	12–70 days	47 days
Scourge	Resmethrin PB	18.00 54.00	Liquid Concentration	Caution	36.5 days	200 days
Siege	Hydramethylnon	2.00	Bait Gel	Caution	10 – 11 days	7 -28 days
Surflan A.S.	Oryzalin	40.40	Liquid	Caution	Not Available	20 days
Suspend SC	Deltamethrin	4.75	Suspension	Caution	Not Available	1 – 2 weeks
Talon G	Bromadifacoum	0.01	Bait Pellets	Caution	Not Available	157 weeks
Talstar EZ	Bifenthrin	0.2	Dust/Granule	Caution	Not Available	7 days – 8 months
Talstar Flow	Bifenthrin	7.9	Suspension	Caution	Not Available	7 days – 8 months

Table 3.12.1-1 Proposed Pesticides for FGGM - continued

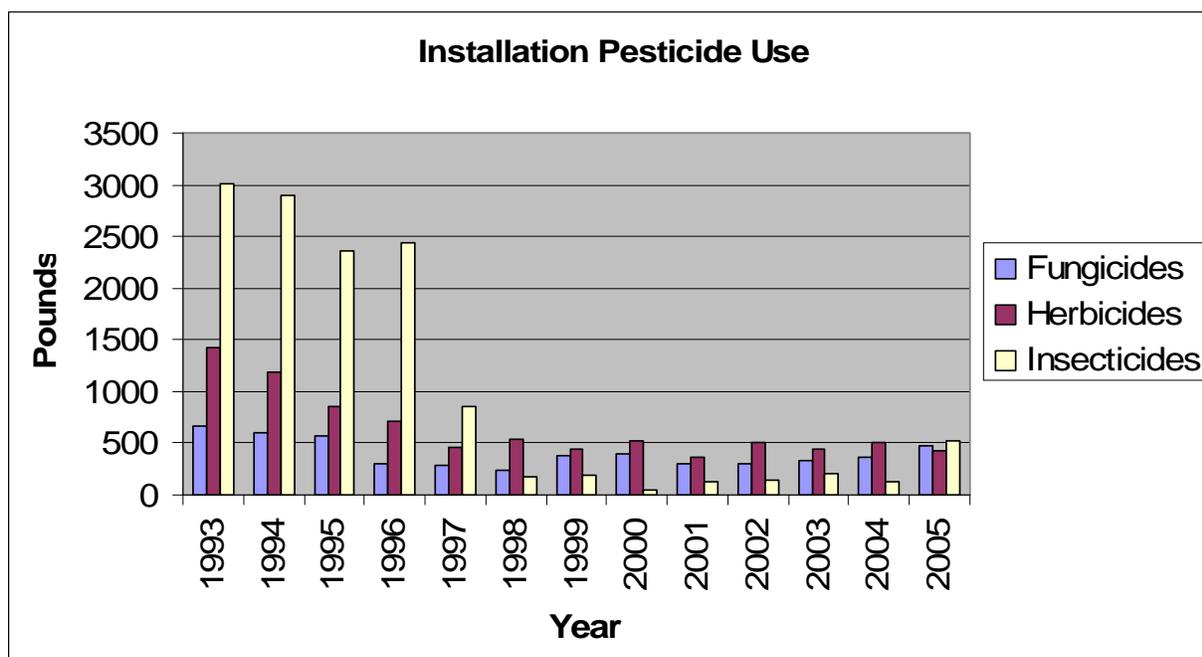
Trade Name	Active Ingredient	Percent Active Ingredient	Formulation	EPA Signal Word	Half Life in Water	Half Life in Soil
Talstar One	Bifenthrin	7.9	Dust/Granule	Caution	Not Available	7 days – 8 months
Talstar PL	Bifenthrin	0.2	Dust/Granule	Caution	Not Available	7 days – 8 months
Tempo 20WP	Cyfluthrin	20.00	Powder	Caution	1 day	56 – 63 days
Tempo SC Ultra	Cyfluthrin	11.80	Liquid SC	Caution	1 day	56 – 63 days
Termidor 80 WG	Fipronil	80.00	Powder	Caution	28 days	3 – 7.3 months
Termidor SC	Fipronil	9.10	Liquid	Caution	28 days	3 – 7.3 months
TopGun	Benzenamine	0.01	Bait	Caution	Not Available	Not Available
Tri-Die Aero	Pyrethrins	0.6	Aerosol	Caution	Not Available	Not Available
Ultracide	Permethrin	4.00	Aerosol	Warning	5 days	30-38 days
Wasp Freeze	Allethrin	0.129	Aerosol	Caution	Not Available	Not Available
Wipe-out	Bromacil	2.3	Emulsion	Caution	60 days	2 months
Source: IPMP, Fort Meade 2005 information provided by Kevin R. Fay.						

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Pesticides and pesticide spills occurring at FGGM facilities and training lands would be handled in accordance with procedures outlined in the Armed Forces Pest Management Board Technical Information Memorandum No. 15, Pesticide Spill Prevention and Management. This document is presented in Appendix D.

FGGM has historically kept meticulous records of pesticide use on the installation. The information presented below in Table 3.12.1-2 depicts a 12 year trend in pesticide use. In order to be effective it will be important to continue to record detailed usage information relating the pounds of active ingredient for each specific pesticide applied so that historical data can be generated and used to evaluate the results of the Integrated Pest Management Plan.

Table 3.12.1-2 Pounds of Active Ingredient by Pesticide



3.12.2 Environmental Consequences

Preferred Alternative: The Preferred Alternative would have a minor positive impact by reducing the quantity of hazardous and toxic waste/materials purchased and stored. Implementing an integrated approach to pest management will limit the amount of pesticide purchased and mixed for a specific application, thus reducing the amount of residual waste generated. The IPMP only allows pesticides that are least-toxic to the environment to be used. The USA has an aggressive pollution prevention program that minimizes the need to store and dispose of hazardous materials and has a policy to remain on the leading edge of pollution prevention technology. Additionally, FGGM would continue to use only certified applicators, as required by Army regulations.

No Action Alternative: The No Action Alternative would maintain existing conditions and would result in a minor negative impact since the quantity of pesticides purchased and stored would not be reduced.

3.13 CUMULATIVE IMPACTS

Based on the analyses presented in this chapter, there would be no significant cumulative effects on land use, air, noise and the protection of children resulting from the implementation of IPMP for FGGM. The combination of non-chemical and limited pesticide use would provide a much more effective pest control approach. The limited, careful application of least toxic pesticides would leave a very positive cumulative impact on the resources directly affected.

Table 3.13-1 summarizes the environmental impacts that will occur as the result of implementing the Preferred Alternative at FGGM.

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**Table 13.1-1
Potential Environmental Impacts of the Proposed Action**

Resource/ Impact Area	Action Alternative	Level of Impact	Type of Impact	Statement
Land Use	Proposed Action	Negligible	Neutral	There is no change to existing land use plans and policies or interference to emergency response.
	No Action Alternative	Negligible	Neutral	
Air Quality	Proposed Action	Minor	Negative (temporary)	Minor, temporary, negative impacts will occur if pest management techniques such as mechanical removal and controlled burns are utilized. The air quality will revert back to its original condition after such events. Therefore, no long-term significant negative impacts will occur.
	No Action Alternative	Minor	Negative (temporary)	Minor, negative impact due to the application of pesticides
Noise	Proposed Action	Minor	Negative (temporary)	Minor, temporary site specific increases in noise levels will occur if powered equipment or bird control noise devices are utilized for pest management practices. The noise levels at will revert back to the original condition once such devices are no longer used. Therefore, no long-term significant impacts will occur.
	No Action Alternative	Minor	Negative (temporary)	Temporary noise will occur during the application of pesticides. The noise levels at will revert back to the original condition once application has ceased. Therefore, no long term significant impacts will occur.
Geology and Soils	Proposed Action	Minor	Positive	Minor, negative impacts may occur due to an increase in soil erosion by mechanical weed removal and a risk of possible soil contamination from pesticide applications. However, the long term impact will be minor positive since areas of weed removal will be reseeded and the pesticides will be broken down by microorganisms. Also, lesser amounts of pesticides will be used.
	No Action Alternative	Minor	Negative	The impact will be minor negative if non-chemical procedures are not implemented and thus utilize an additional amount of pesticides.

**Table 13.1-1
 Potential Environmental Impacts of the Proposed Action - continued**

Resource/ Impact Area	Action Alternative	Level of Impact	Type of Impact	Statement
Water Resources	Proposed Action	Minor	Positive	Minor, positive temporary and long-term impacts will occur as long as weed removal areas are reseeded and the recommended 100 feet buffer zone is implemented when herbicides are used.
	No Action Alternative	Minor	Negative	The impact will be minor negative if non-chemical procedures are not implemented and the 100 feet buffer zone is not utilized when herbicides are used.
Biological Resources	Proposed Action	Minor	Positive	Minor, positive temporary and long term impacts will occur since the Integrated Pest Management Plan defines actions to take regarding target species.
	No Action Alternative	Minor	Negative	The no action alternative will provide minor, negative impacts if species specific and non-chemical procedures are not implemented.
Cultural Resources	Proposed Action	Minor	Positive	Minor, positive temporary and long term impacts will occur due to protecting and preserving any structures that might be listed or become listed on the National Registry of Historic Places.
	No Action Alternative	Minor	Negative	Any structure on or potentially listed on the Registry of Historic Places is not anticipated to be protected as well as under the integrated pest management plan.
Socioeconomics	Proposed Action	Minor	Positive	Implementation of the Integrated Pest Management Plan will have a minor positive effect by reducing costs of the program by reducing the amount of pesticides applied and thus reducing the amount of pesticides purchased.
	No Action Alternative	Minor	Negative	The costs of the program are not expected to be reduced because the amount of pesticides purchased are not expected to be reduced.

**Table 13.1-1
 Potential Environmental Impacts of the Proposed Action - continued**

Resource/ Impact Area	Action Alternative	Level of Impact	Type of Impact	Statement
Environmental Justice	Proposed Action	Minor	Positive	Reducing noxious pests by implementing the Pest Management Plan will have a minor positive impact by reducing health related problems.
	No Action Alternative	Minor	Negative	Implementation of the no action alternative is not expected to noxious pests as readily as the proposed action.
Protection of Children	Proposed Action	Negligible	Neutral	Implementation of an integrated pest management plan will continue to protect children to the same standard thus producing a negligible impact.
	No Action Alternative	Negligible	Neutral	The current integrated pest management plan protects children at Fort Meade.
Hazardous and Toxic Materials and Wastes	Proposed Action	Minor	Positive	A minor positive impact would occur due to a reduction of the pesticide quantities generated and stored.
	No Action Alternative	Minor	Negative	A minor negative impact would occur since the pesticide quantities generated and stored would not be reduced.

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4.0 FINDINGS AND CONCLUSIONS

Based upon the analyses contained in this EA, it has been determined that the implementation of an integrated pest management approach would be the most effective and preferred method to control pests at FGGM. An IPMP is predominately a management decision that would result in environmentally safer and more economical measures for installation pest management and would encourage installation pest managers to consider the effects of their actions upon other installation-controlled resources. This approach would effectively control most pest populations by reducing the size and spread of pest infestations. It also closely matches the goals and intent of the USA and would provide the greatest long-term potential for effective pest control. The USA makes every effort to plan, design, and institute a management plan that would minimize long-term impacts. Best management practices would be used in the identification and abatement of any pest management problems.

Implementation of the IPMP would result in the efficient management of pesticides at FGGM. The IPMP establishes explicit responsibilities, standard operating procedures, and long-range goals for managing pesticides on FGGM property in compliance with all applicable federal laws, regulations, EOs, Presidential Memoranda, and DoD and Department of the Army guidelines. The procedures recommended in the IPMP (Appendix A) require close interaction between the installation pest manager and other installation offices. Environmental and human resources under FGGM control would receive more consideration and protection than previously afforded.

Impacts of implementing the IPMP are negligible on land use, air quality, noise levels, and the protection of children. However, the impacts of implementing the IPMP are positive for the remaining suite of resources evaluated. The long-term effect of the project is expected to benefit FGGM and provide a positive impact on natural resources. Furthermore, there are no indications that implementation would violate any federal, state or local environmental laws or regulations. The requirements of the NEPA have been met and based upon the foregoing findings and conclusions, issuance of a Finding of No Significant Impact would be appropriate, and preparation of an Environmental Impact Statement is not required prior to implementation of the proposed action.

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6.0 LIST OF PREPARERS

Table 6.0-1 provides the names of those individuals that were responsible for the preparation of this EA. This list includes the key management personnel from the lead agency.

Table 6.0-1

**Preparers of the Environmental Assessment
Fort Meade Integrated Pest Management Plan**

Name	Professional Discipline	Years of Experience
Kevin R. Fay	Environmental Protection	30
Angelo Colianni	Natural Resources & Env. Program	31
Joseph DiGiovanni	Environmentalist	14
Donald Marquardt	Environmentalist/Forester	28
Mick Butler	Environmental Program Manager	14
Heather Carolan	Environmentalist/NEPA Coordinator	14

7.0 LIST OF PERSONS CONTACTED

The following persons were contacted as part of this project.

Persons Contacted at Fort Meade

Name	Department/Company
Donald Marquardt	Environmental Management Office
Angelo Colianni	Environmental Management Office
Mick Butler	Chief, Environmental Management Division
Kevin R. Fay	Installation Pest Management Coordinator
Joseph DiGiovanni	Environmental Management Office
Mike Doetser	Golf Course Superintendent
Ben Pagac	USACHPPM-North Field Office
Andrew Bagnall	DPW Master Planning
Alice Ginter	DPW Real Estate Specialist
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Persons Contacted Outside of Fort Meade

Name	Department/Company
Dr. Zia Mehr	Army Environmental Center

Agencies Contacted

Department/Company
US Environmental Protection Agency
Maryland Dept. of Environment
Maryland Dept. of Natural Resources
Maryland Historical Trust

Appendix A
Fort Meade, Maryland
Integrated Pest Management Plan
2005

Appendix B
DoD Pest Management Program
DoD Instruction 4150.7