



DEPARTMENT OF THE NAVY  
NAVAL BASE VENTURA COUNTY  
311 MAIN ROAD, SUITE 1  
POINT MUGU, CA 93042-5033

IN REPLY REFER TO:

5090  
Ser N45V/0002  
3 Jan 12

State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100

RECEIVED  
JAN 30 2012  
DIVISION OF WATER QUALITY

Dear Sir or Madam:

Please find enclosed a Notice of Intent (NOI) for Naval Base Ventura County (NBVC) to comply with the terms of Water Quality Order Number 2011-0002-DWQ Statewide General National Pollution Discharge Elimination System Permit (NPDES) for discharges of biological and residual pesticides to surface waters of the United States for vector control, General Permit Number CAG990004.

The following enclosures are included: Notice of intent (enclosure (1)); Pesticide Application Plan (PAP) (enclosure (2)); and a check for the filing fee (enclosure (3)).

If you have any questions, please contact Ms. Valerie Vartanian our Wetlands Program Manager at (805) 989-4740, or Ms. Alicia Thompson our Water Program Manager at (805) 982-2969.

Sincerely,

J.J. MCHUGH  
Captain, U.S. Navy  
Commanding Officer

Enclosures: 1. Notice of Intent  
2. Pesticide Application Plan  
3. Filing Fee

ENCLOSURE 1

NOTICE OF INTENT

**ATTACHMENT G – NOTICE OF INTENT**

**WATER QUALITY ORDER NO. 2011-0002-DWQ  
GENERAL PERMIT NO. CAG 990004**

**STATEWIDE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT  
FOR BIOLOGICAL AND RESIDUAL PESTICIDE DISCHARGES  
TO WATERS OF THE UNITED STATES  
FROM VECTOR CONTROL APPLICATIONS**

**I. NOTICE OF INTENT STATUS (see Instructions)**

Mark only one item <input checked="" type="checkbox"/> A. New Applicator <input type="checkbox"/> B. Change of Information: WDID# _____
<input type="checkbox"/> C. Change of ownership or responsibility: WDID# _____

**II. DISCHARGER INFORMATION**

A. Name Naval Base Ventura County			
B. Mailing Address 311 Main Road, Suite 1, N45V			
C. City Point Mugu	D. County Ventura	E. State CA	F. Zip Code 93042
G. Contact Person Valerie Vartanian	H. Email address valerie.vartanian@navy.mil	I. Title Wetlands Program Manager	J. Phone 805-989-4740

**III. BILLING ADDRESS (Enter Information only if different from Section II above)**

A. Name			
B. Mailing Address			
C. City	D. County	E. State	F. Zip Code
G. Email address	H. Title	I. Phone	

**IV. RECEIVING WATER INFORMATION**

A. Biological and residual pesticides discharge to (check all that apply)\*:

1. Canals, ditches, or other constructed conveyance facilities owned and controlled by Discharger.  
 Name of the conveyance system: Mugu Lagoon and associated tidal canals and creeks

2. Canals, ditches, or other constructed conveyance facilities owned and controlled by an entity other than the Discharger.  
 Owner's name: \_\_\_\_\_  
Name of the conveyance system: \_\_\_\_\_

3. Directly to river, lake, creek, stream, bay, ocean, etc.  
 Name of water body: Mugu Lagoon

\* A map showing the affected areas for items 1 to 3 above may be included.

B. Regional Water Quality Control Board(s) where application areas are located  
(REGION 1, 2, 3, 4, 5, 6, 7, 8, or 9): Region 4  
(List all regions where pesticide application is proposed.)

A map showing the locations of A1-A3 in each Regional Water Board shall be included.

**V. PESTICIDE APPLICATION INFORMATION**

A. Target Organisms:  Vector Larvae  Adult Vector

B. Pesticides Used: List name, active ingredients and, if known, degradation by-products  
1) Zoecon Altosid Pellets-S. Methoprene; 2) Zoecon Altosid Briquets-Methoprene; 3) Teknar HPD-Bacillus Thuringiensis Israelensis; 4) Vecto Bac12AS-Bacillus Thuringiensis Israelensis

C. Period of Application: Start Date March 2012 End Date October 2012  
To be continued on an annual basis

D. Types of Adjuvants Added by the Discharger: N/A

**VI. PESTICIDES APPLICATION PLAN**

A. Has a Pesticides Application Plan been prepared?\*

Yes  No

If not, when will it be prepared? \_\_\_\_\_

\* A copy of the PAP shall be included with the NOI.

B. Is the applicator familiar with its contents?

Yes  No

**VII. NOTIFICATION**

Have potentially affected governmental agencies been notified?

Yes  No

\* If yes, a copy of the notifications shall be attached to the NOI.

**VIII. FEE**

Have you included payment of the filing fee (for first-time enrollees only) with this submittal?

Yes  NO  NA

**IX. CERTIFICATION**

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I certify that the provisions of the General Permit, including developing and implementing a monitoring program, will be complied with."

A. Printed Name: J. J. McHugh, Captain U.S. Navy

B. Signature:  \_\_\_\_\_

Date: 1/3/12

C. Title: Commanding Officer Naval Base Ventura County

**X. FOR STATE WATER BOARD USE ONLY**

WDID:	Date NOI Received:	Date NOI Processed:
Case Handler's Initial:	Fee Amount Received: \$	Check #:

ENCLOSURE 2

PESTICIDE APPLICATION PLAN

# **PESTICIDE APPLICATION PLAN**

For the Biological and Residual Pesticide Discharges to Surface Waters of  
the US by Naval Base Ventura County

**FOR WATER QUALITY ORDER NO. 2011-0002-DWQ STATEWIDE NATIONAL  
POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR  
BIOLOGICAL AND RESIDUAL PESTICIDE DISCHARGES TO WATERS OF THE OF  
THE UNITED STATES FROM VECTOR CONTROL APPLICATIONS (GENERAL  
PERMIT) NO. CAG 990004**

October 12, 2011

Prepared for:

State Water Resources Control Board  
Los Angeles Regional Water Quality Control Board (Region 4)

Enclosure (2)

## Table of Contents

---

Introduction.....	1
1 Description of Target Areas.....	3
2 Pesticide Selection Factors.....	4
3 Types of Pesticide Products.....	5
4 Description of Application Areas.....	6
5 Other Control Methods Used.....	7
6 Anticipated Product Amounts.....	8
7 Monitoring Locations.....	9
8 Evaluation of Available BMPs.....	14
9 Description of BMPs.....	15
9.1 Measures to Prevent Pesticide Spill.....	15
9.2 Measures to Ensure Minimum and Consistent Amount Used.....	15
9.3 Applicator Education on Adverse Effects of Pesticide Application.....	15
9.4 BMPs for Pesticide Products Used.....	15
9.5 BMPs for Environmental Setting.....	15
10 Identification of the Problem.....	16
10.1 Establishment of Vector Populations.....	16
10.2 Identification of Target Vector Species.....	16
10.3 Identification of Known Breeding Areas.....	16
10.4 Analysis of Surveillance Data.....	16
11 Examination of Alternatives to Treatments.....	17
12 Correct Use of Pesticides.....	18
13 References.....	19



## List of Tables

---

Table 1. Planned Pesticides for Use by Naval Base Ventura County.....	5
Table 2. NBVC Point Mugu Mosquito Surveillance Sites, 2010 .....	7
Table 3. N Pesticide Usage for Mosquito Control January 2010 – December 2010 .....	13

## List of Exhibits and Appendices

---

Exhibit 1 – Map of Naval Base Ventura County

Appendix 1 – *Integrated Pest Management Plan for Naval Base Ventura County (on disk)*

Appendix 2 – *Best Management Practices for Mosquito Control in California (on disk)*

## List of Acronyms and Abbreviations

---

BMP	Best Management Practice
CDPH	California Department of Public Health
DoD	Department of Defense
General Permit	General Permit for Vector Control
MSDS	Material Safety Data Sheets
IPM	Integrated Pest Management
IPMP	Integrated Pest Management Plan
NAVFAC	Naval Facilities Engineering Command
NBVC	Naval Base Ventura County
NPDES	National Pollutant Discharge Elimination System
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resource Control Board

## **Introduction**

---

Naval Base Ventura County (NBVC) Environmental Division is charged with protecting the occupants of NBVC from vectors and vector-borne disease under the U.S. Code of Federal Regulations (CFR) at 40 CFR Section E 152-180 Pesticide Programs, DoD, Navy and Marine Corps: DoD 4150.07, DoD Pest Management Program; OPNAVINST 6250.4B, Pest Management Programs; OPNAVINST 5090.1C, Environmental Readiness Program Manual California: California Code of Regulations (CCR) Title 3 Division 6. NBVC operates year-round to control mosquitoes, other flies, ants, and rodents.

NBVC is within the jurisdiction of the Los Angeles Regional Water Quality Control Board, and is seeking coverage under the General Permit No. CAG 990004 as “a public entity” that applies biological and residual pesticides for vector control in or near waters of the United States (Exhibit 1).

There are 3 locations that compose NBVC: Point Mugu, Port Hueneme, and San Nicolas Island. NBVC Point Mugu is located in Ventura County, California, about 50 miles northwest of Los Angeles. NBVC Point Mugu’s closest neighboring communities are Oxnard, Camarillo, Newbury Park, Thousand Oaks, Port Hueneme, and Ventura. Immediately north and northwest of NBVC Point Mugu are two duck hunting clubs: the Point Mugu Game Reserve and the Ventura County Game Reserve. The Pacific Ocean and Ormond Beach lie directly south and west of the site, respectively.

NBVC Port Hueneme is located on the coast of Ventura County, California, adjacent to the cities of Port Hueneme and Oxnard. Port Hueneme is surrounded by the City of Oxnard to the east and north, and is bordered by Channel Islands Harbor on the west.

NBVC San Nicolas Island was put under administrative control of NBVC in Oct of 2005. NBVC began providing pest control services through the FSC / BOS contract on 01 October 2009. A Partner Pest Management Plan for NBVC San Nicolas Island is found in the NBVC Integrated Pest Management Plan (see Appendix 1).

NBVC utilizes an Integrated Pest Management (IPM) Program strategy to prevent the introduction of invasive plants and disease vectors and enhance quality of life through pest prevention. IPM is implemented for Force Health Protection, pest protection of all buildings, enhancement of force protection and wildfire protection through weed management, and protecting federally listed species as required by the Endangered Species Act. The IPM Program consists of the following activities: 1) Surveillance for vectors, vector habitats, and associated pathogens/diseases. This includes field and laboratory analysis of vectors in order to evaluate populations and emerging disease threats; 2) Source reduction to limit breeding by vectors. This includes management of vegetation, land, and water with appropriate landowners to minimize vector production; and 3) Education and outreach efforts targeted toward the public and private landowners in ways to facilitate source reduction and minimize disease-carrying vectors.

NBVC Point Mugu is the only installation of NBVC that applies pesticides for the purpose of vector control to locations within the jurisdiction of the Los Angeles Regional Water Quality

Control Board and contain the watersheds of Calleguas Creek, Mugu Lagoon. Therefore all examples and discussions below are in respect to the activity at NBVC Point Mugu.

As required under Section VIII. Pesticide Use Requirements. C., of the General Permit, NBVC is submitting this document as its Pesticide Application Plan for review and approval by the State Water Resources Control Board (SWRCB).

Excerpts from Section VIII. Pesticide Use Requirements. C. Pesticide Application Plan., are included in *bold italics*.

# **1 Description of Target Areas**

---

*Description of the ALL target areas and adjacent areas, if different from the water body of the target area, in to which larvicides and adulticides pesticides are being planned to be applied or may be applied to control vectors. The description shall include adjacent areas, if different from the water body of the target areas.*

The receiving water systems in NBVC which are subject to pesticide applications include navigable waters and their tributaries, waters of the State, and waters of the US in NBVC and adjacent to installation boundaries (due to drift) that breed mosquitoes. The environmental setting at NBVC is characterized as a wetland environment. Target areas are Mugu Lagoon tidal channels. Adjacent water bodies include Calleguas Creek, Mugu Lagoon, and the Pacific Ocean.

For more specific application areas/sites see Section 4 of this document.

## **2 Pesticide Selection Factors**

---

### *Discussion of the factors influencing the decision to select pesticide applications for mosquito vector control.*

NBVC performs pest control under the Integrated Pest Management Plan (IPMP), July 2010. NBVC's IPM Plan outlines surveillance and control measures for vectors within NBVC. The purpose of the IPM Plan is to provide guidelines to the staff and information to stakeholders regarding the various responses made to prevent and control disease vectors as well as introduced diseases and vectors on NBVC. This document details the roles and responsibilities of Management, Administration, Communications, Scientific/Technical, and Operations staff in responding to vector-borne disease threats. The responses are organized by vector species that cause illnesses in humans, and wildlife. The IPM Plan includes guidelines for surveillance for vectors and disease, site assessment, source reduction, biorational and chemical control methods, public education and Emergency Vector Management. The IPM Plan establishes specific thresholds for the initiation of physical and chemical control based on numbers and species of vectors and the presence or absence of infective agents. Treatment thresholds are established for mosquito developmental sites in the IPM Plan where potential disease vector and/or nuisance risks are evident. Only those sources that represent imminent threats to public health or quality of life are treated.

Treatment thresholds are based on the following criteria: mosquito species present, mosquito stage of development, nuisance or disease potential, mosquito abundance, flight range, proximity to populated areas, size of source, presence/absence of natural enemies or predators, and presence of sensitive/endangered species.

When thresholds are exceeded, an appropriate control strategy is implemented. Control strategies are selected to minimize potential environmental impacts while maximizing efficacy. The method of control is based on the above threshold criteria but also habitat type, water conditions and quality, weather conditions, cost, site accessibility, size of site and a number of other factors as specified in the IPM Plan.

### 3 Types of Pesticide Products

*Pesticide products or types expected to be used and if known, their degradation by-products, the method in which they are applied, and if applicable, the adjuvants and surfactants used.*

The types of pesticides used in mosquito control and the methods of applications are listed below and discussed in detail in the Best Management Practices for Mosquito Control in California (Appendix 2).

NBVC used the pesticides listed in attached Table 1 below. There are no adjuvants or surfactants added to any of the products below.

**Table 1. Planned Pesticides for Use by Naval Base Ventura County.**

PESTICIDES USED FOR MOSQUITO CONTROL AT NAVAL BASE VENTURA COUNTY							
Active Ingredient	Trade Name	EPA Reg. No.	Manufacturer	Formulation	Active Ingredient	Application	Pesticide Classification
Bacillus thuringiensis israelensis (Bti)	VectoBac G	73049-10	Valent BioSciences Corporation	Granules	2.80%	Larvae	Biorational
S-Methoprene	Altosid XR Extended Residual Briquets	2724-421	Wellmark International Zoecon	Briquet	2.1%	Larvae	IGR
S-Methoprene	Altosid Pellets Mosquito Growth Regulator	2724-448	Wellmark International Zoecon	Pellet-type Ganules	4.25%	Larvae	IGR
Bacillus thuringiensis israelensis (Bti)	Teknar HP-D	73049-404	Valent BioSciences Corporation	Liquid	1.60%	Larvae	Biorational

## **4 Description of Application Areas**

---

*Description of ALL the application areas\* and the target areas in the system that are being planned to be applied or may be applied. Provide a map showing these areas.*

Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is the NBVC's preferred solution, and whenever possible NBVC applies long-term solutions to reduce or eliminate the need for continued applications as described in Best Management Practices for Mosquito Control in California and the Integrated Pest Management Plan for Naval Base Ventura County.

The targets are primarily the immature aquatic stages of insect vectors, including mosquitoes, midges, and black flies, which predominantly breed in standing or slow-moving water. Larvicides are applied at larval mosquito development sites which can include drainage channels, wetlands, roadside ditches, catch basins, and potentially, any aquatic site or low lying area that has standing water for longer than 96 hours. Many of these applications take place in wetland tidal channels. The map and description of surveillance and application areas are provided in Table 2. Only sites that are surveyed and show high larval counts are treated.

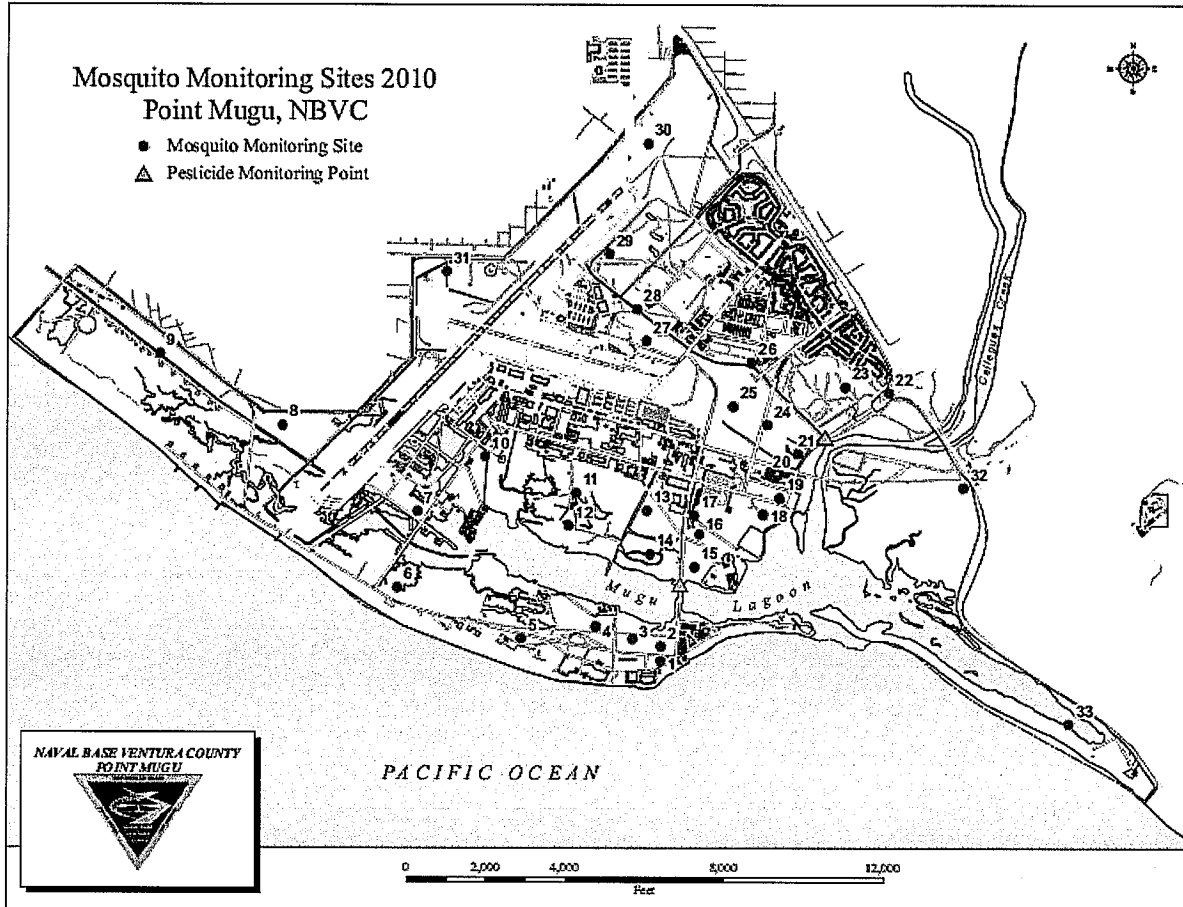
Areas requiring larvicide applications are treated, as necessary, primarily from spring to late fall during the warmest months (approximately March – October). However, if vectors are a persistent problem at some locations, applications may be made year-round. Pesticides are applied only when a vector is present at threshold levels, and to water that will be present for at least 96 hours.

Directing our main efforts at controlling mosquito larvae allows NBVC to localize treatments and use the least toxic alternatives. Adult mosquitoes may occasionally be targeted for control. However, since pesticides must be applied over a greater area and are less selective, NBVC avoids using them wherever possible.

*Representative surveillance locations\* and the justification for selecting these surveillance locations.*

The map and list below depicts the anticipated areas in which mosquitoes will breed. Areas are surveyed to determine presence of larvae and then targeted for larvicide applications. These areas are based on 2010 treatment application data. Additional application areas include breeding locations within the coastal wetlands, and intermittent or ephemeral streams similar to the sites shown below. Only NBVC Point Mugu is depicted, there are no aquatic pesticide treatments that occur at NBVC Port Hueneme or NBVC San Nicolas Island.

**Table 2. NBVC Point Mugu Mosquito Surveillance Sites, 2010**  
**Map and List of Sites**



Site No.	Site Name	Location	Note
1	Beach Road	NW corner of Beach Road and Laguna Rd. bordered by 20th St. on the West and by the South F Ave. on the North.	This area tends to hold some water following the high tides.
2	Laguna Rd	NE corner of Laguna Rd and Beach Rd. with Clapper Rail Trail as a boundary on the East	Breeding occurs intermittently at this location during the entire season.
3	South G Ave	There are various areas scattered on the SE section of South G Ave. and the Clapper Rail Trail	These areas are link to the high tides for the accumulation of water and breeding cycles.



Site No.	Site Name	Location	Note
4	Lemar Ave	East of Clapper Rail Trail, West of Lemar Ave., North of South G Ave.	Intermittent breeding occurs at this area beginning as early as March.
5	19th St	North and South of I Ave. Bordered by 19th St and Beach Rd.	No breeding was noted at this area on 2003 and 2004 season. Recent Brood was discovered on March 2005. Some activity noted on 2006. No activity was noted in 2007.
6	L Avenue	SE corner of L Avenue and Beach Road	Clapper Rail Birds have been sighted at this location. Instructed to perform surveillance or treatments only under escort by Environmental personnel.
7	17th St	NE Corner of 17th St and L Avenue, bordered by 16th St. on the east.	Larvae were discovered at the end of the 2004 season. Occasional activity was noted in 2005. Activity increased in 2009.
8	Perimeter Rd.	South of Ditch road and West of perimeter road,	No breeding occurred in the 2003 & 2004 season. Two separate broods have been documented since March 2005.
9	Perimeter Rd	West of perimeter Rd. bordered by Ditch Rd, Tide Rd, RCA Rd Cottar Rd. and Arnold Rd.	This area has been the site of heavy infestations at the beginning of every season since 2003 and will normally dry out at the end of August. Activity increased during the 2009 season due to high tides.
10	L Avenue.	SW corner of L Avenue and 14th St.	This Site undergoes a series of broods during the entire season.
11	South H Avenue	North of H Avenue. West pf Bldgs 501, 514 & 515. South of H Avenue along the way to South Mugu Rd.	Larval activity is found often at this site.
12	H Avenue	At the end of antenna roads.	Pool of standing water develops at the beginning of May. Heavy larval activity develops as soon as water is present at this area.

Site No.	Site Name	Location	Note
13	South Mugu Rd	West of South Mugu Rd, North of Laguna Rd and West of Bldgs 509 & 513	Constant development of larvae during the entire season.
14	Storage Rd	Two pools of water at West of old Storage Rd and North of Laguna Rd	These pools of water are filled by high tides and develop heavy infestation of larvae during the season were increase by recent removal of vegetation and the redesign of existing wetlands
15	Laguna Rd	South of Laguna Rd, West of South Mugu Rd, North of Transportation site.	This area was developed after the heavy rains on February 2005. First larva activity was discovered at the end of February 2005. Standing water was noted at the beginning of March 2010.
16	Dump Rd	Area bordered by Dump Rd, Laguna Rd., South Mugu Rd. and the Transportation site.	Constant larval activity is found in some sections during the season.
17	Fuel Farm	SW corner of Laguna Rd and Dump Rd.	Larvae develop constantly at this site during the entire season.
18	13th Street	North of 13th Street at the end of Las Posas Rd.	This site holds water most of the year and occasionally a brood will develop at this site.
19	13th St-Las Posas Rd	NE corner of Las Posas and 13th Street	Few broods develop at this site. Activity on this site has increased in the last two years.
20	12th St.	Area bordered by 11th, Las Posas Rd., Main Rd and 12th St.	Several broods develop at this site during the season.
21	11th St	SE corner of 11th St. and Las Posas Rd.	This area will hold water at the beginning of the season only. Some broods will develop before it dries out.

Site No.	Site Name	Location	Note
22	Las Posas Rd	South and North of Las Posas Rd near the exit of the entry Gate	Water body created by seasonal rain in 2005. Normally dry by mid Summer. No water collected at this site on 2005, 2006. No standing water is present at this area up to this date.
23	Snake Rd	North of Las Posas rd., South of Main Rd, West of San Miguel Housing.	This area holds pools of fresh water at the beginning of the season. One section will last till the end of July. The canal will flood with high tides.
24	Main Rd	South and North of Main Rd., East of 11th St.	Sporadic flooding form seasonal rain-fall and high tides. Very active brood development when flooding occurs.
25	Dispensary Rd	North and South of Dispensary Rd	Very active broods found when flooded.
26	C Ave.	Track, Medical clinic grounds, SE corner of 6th St.	Activity at this area is closely related to seasonal rainfall and excessive landscape watering.
27	Donald Rd.	East of Donald Rd.	Area floods with rainfall and may flood with high tides. Larvae develop rapidly when flooded is present.
28	Golf Course	Canal next to Airfield and antenna field	This site may receive fresh water from the Oxnard Drainage and also from high tides. Recurring larva infestation is often found at these areas.
29	Golf Course	Within the Golf Course Area	Constructed ponds. Larvae will develop occasionally.
30	Perimeter Rd	South of perimeter Rd near the intersection with the air national guard section	Larval activity is regularly found during the season.
31	Perimeter Rd	Perimeter Rd, end of Tacan Rd. northeast, near fire department training area.	This canal holds water all year round. Larvae have been found sporadically in this area in the past.

Site No.	Site Name	Location	Note
32	Oxidation Ponds	Near entrance from highway 1	Activity found at the beginning of the season. No water is found late in the season.
33	Rifle Range	South end of Base	Larval activity develops with high tides.

## 5 Other Control Methods Used

---

### *Other control methods used (alternatives) and their limitations.*

With any mosquito or other vector source, NBVC's first goal is to look for ways to eliminate the source, or, if that is not possible, for ways to reduce the vector potential. The most commonly used methods and their limitations are included in the Best Management Practices for Mosquito Control in California (Appendix 2).

Some specific methods used by NBVC include educating residents that mosquitoes develop in standing water and encouraging them to remove sources of standing water, working with residents to minimize the need for public health pesticide applications, and use of non-pesticide biological control agents like mosquito fish, *Gambusia affinis*, when appropriate, as recommended in Appendix M of the NBVC IPMP, July 2010.

It is difficult to keep up with the constant influx of new personnel and families on base and therefore concepts such as not allowing toys or other yard items to fill with water may not be reaching everyone at the appropriate times of the year.

Most of the waterways at NBVC are not only jurisdictional wetlands but are considered important habitats to several Threatened/Endangered species. This not only limits the types of activities that we can perform during the mosquito season, but would be counter to our Integrated Natural Resources Management plans, Biological Opinions, and other documents that protect the natural resources on base. We have native species of mosquitoes that are a part of the natural ecosystem here, supplying food to a myriad of wildlife species.

## 6 Anticipated Product Amounts

---

*Approximately how much product is needed/anticipated to be used and how this amount was determined.*

The total amounts of mosquito control pesticides applied by NBVC from January 2010 – December 2010 are shown in Table 3 below. These amounts serve as an approximation of the amount of product anticipated for annual future use. Several factors influence the amounts of pesticides applied, which can include rainfall, weather patterns, disease outbreak, and availability of products.

**Table 3. Approximate Anticipated Pesticide Usage for Mosquito Control by NBVC (Based on actual usage from January 2010 – December 2010)**

---

<b>Product</b>	<b>No. of Applications</b>	<b>Total Amount</b>	<b>Unit</b>
Altosid Pellets	5	60.0	pounds
Altosid XR Briquets	30	213	pounds
Teknar HP-D	34	429	gallons
Vectobac G	11	505	pounds

---

## 7 Monitoring Locations

NBVC will monitor the application of larvicides as required in Attachment C of NPDES No. CAG990004. Larvicides are typically applied on a monthly basis from March until October for a total of eight applications per year. Adulticides are not applied to waters of the US at NBVC PM. Testing will be performed by a lab certified by the California Department of Public Health.

### 7.1 Larvicide Monitoring

There are two larvicide active ingredients used at NBVC, S-Methoprenev and Bacillus thuringiensis israelensis (Bti). Temephos is not applied at NBVC.

Sample Type	Constituent / Parameter	Units	Sample Method	Minimum Sampling Frequency	Sample Type Requirement	Required Analytical Test Method
Visual	1. Monitoring Area 2. Appearance of waterway 3. Weather Conditions	NA	Visual Observation	6 Application Areas	Background, Event and Post Event Monitoring	NA
Physical	1. Temperature 2. pH 3. Turbidity 4. Electrical Conductivity @ 25 Degrees C		Grab 3' Below Surface or Mid-Depth if Water Body is < 6'	1 Sample per Active Ingredient for Each Application	Background, Event and Post Event Monitoring	As described in 40 CFR Part 136
Chemical	1. Active Ingredient (NA) 2. Dissolved Oxygen	1.NA 2. mg/L	Grab 3' Below Surface or Mid-Depth if Water Body is < 6'	1 Sample per Active Ingredient for Each Application	Background, Event and Post Event Monitoring	As described in 40 CFR Part 136

## 7.2 Reporting

An annual report will be submitted to the Regional Water Quality Control Board as required by General Permit No. CAG990004.



## **8 Evaluation of Available BMPs**

---

*Evaluation of available BMPs to determine if there are feasible alternatives to the selected pesticide application project that could reduce potential water quality impacts.*

Naval Base Ventura County uses BMPs described in its own IPM Plan, pest management contract language, as well as practices in accordance with state guidelines from the Best Management Practices for Mosquito Control in California.

Prior to each pesticide application, all feasible alternatives are evaluated as stated in the IPM Plan.

- Educate residents and tenants on base to remove sources of ponded water around homes, work areas.
- Suggest avoidance of nuisance mosquitoes by covering exposed skin, using insect repellent or avoiding staying out at dawn and dusk when mosquitoes are prevalent.
- Irrigation on base is kept at a minimum to comply with sustainability standards for low water use.
- Native habitats are maintained which provides shelter and nesting areas for song birds that feed on mosquitoes.
- Most wetlands on base are tidally driven. Any new wetland restoration strives to achieve tidal connection in order to maintain water drainage.
- Surveillance of areas occurs regularly in order to catch problem areas before they build up to a large scale issue. For natural wetlands, the least toxic approach is to use Bti larvicide pellets.

## **9 Description of BMPs**

---

*Description of the BMPs to be implemented. The BMPs shall include, at the minimum.*

NBVC uses BMPs described in its own IPM Plan, contract language with pest management contractors, as well as practices in accordance with state guidelines from the Best Management Practices for Mosquito Control in California.

### **9.1 Measures to Prevent Pesticide Spill**

NBVC and Contracted staff monitors application equipment on a daily basis to ensure it remains in proper working order. Spill mitigation devices are placed in all spray vehicles and pesticide storage areas to respond to spills. Employees are annually trained on spill prevention and response. All safety, handling, and use requirements and instructions are followed per pesticide product labels and Material Safety Data Sheets (MSDS).

### **9.2 Measures to Ensure Minimum and Consistent Amount Used**

Spray equipment is calibrated each year and is a requirement of the contract with pest managers. All safety, handling, and use requirements and instructions are followed per pesticide product labels and Material Safety Data Sheets.

### **9.3 Applicator Education on Adverse Effects of Pesticide Application**

The California Vector Control Technician Certification and Continuing Education Guidelines (CDPH, 2007) describes all topics that vector control technicians are trained and certified in. Applicators are required to complete pesticide training annually.

### **9.4 BMPs for Pesticide Products Used**

The pest management contractor calibrates truck and hand larviciding equipment each year to meet application specifications. Supervisors review spray records daily to ensure appropriate amounts of material are being used. Ground-based Ultra Low Volume adulticiding equipment is calibrated for output and droplet size to meet label requirements. All safety, handling, and use requirements and instructions are followed per pesticide product labels and MSDS.

### **9.5 BMPs for Environmental Setting**

NBVC manages the environmental setting where applicable, including housing and industrial areas. Tenants and residents are informed on mosquito breeding on NBVC and their role in protecting themselves. Due to the protection afforded to wetland habitats, early detection through regular surveillance and a rapid response to catch populations before they multiply are tactics used.

## **10 Identification of the Problem**

---

*Prior to first pesticide application covered under this General Permit that will result in a discharge of biological and residual pesticides to waters of the US, and at least once each calendar year thereafter prior to the first pesticide application for that calendar year, the Discharger must do the following for each vector management area.*

### **10.1 Establishment of Vector Populations**

*If applicable, Establish densities for larval and adult vector populations to serve as action threshold(s) for implementing pest management strategies;*

Only those mosquito sources that staff determines to represent imminent threats to public health or quality of life are treated. The presence of any mosquito may necessitate treatment. Treatment thresholds are based on a combination of one or more of the following criteria: mosquito species present, mosquito stage of development, pest, nuisance, or disease potential, disease activity, mosquito abundance, flight range, proximity to populated areas, size of source, and presence of sensitive/endangered species or habitats. This is discussed in detail in Appendix M of NBVC's IPM Plan.

### **10.2 Identification of Target Vector Species**

*Identify target vector species to develop species-specific pest management strategies based on developmental and behavioral considerations for each species;*

NBVC addresses this practice as discussed in the NBVC IPM Plan. As needed, the Branch Health Clinic Preventive Medicine Department is trained (DoD Category 8, Public Health Pest Control) and equipped to identify target vector species.

### **10.3 Identification of Known Breeding Areas**

*Identify known breeding areas for source reduction, larval control programs and habitat management;*

Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is the NBVC's preferred solution, and whenever possible, NBVC works with residents to implement long-term solutions to reduce or eliminate the need for continued applications. This is addressed in Appendix M of the NBVC IPM Plan.

### **10.4 Analysis of Surveillance Data**

*Analyze existing surveillance data to identify new or unidentified sources of vector problems as well as areas that have recurring vector problems.*

NBVC continually collects adult and larval mosquito surveillance data, dead bird reports, avian seroprevalence test results, and uses them to guide mosquito control activities. NBVC address this practice as discussed in its IPM Plan and the Emergency Vector Control Plan.

## **11 Examination of Alternatives to Treatments**

---

*Dischargers shall continue to examine alternatives to pesticide use to reduce the need for applying larvicides that contain temephos and for spraying adulticides. Such methods include:*

*a. Evaluating the following management options, in which the impact to water quality, impact to non-target organisms, vector resistance, feasibility, and cost effectiveness should be considered: no action, prevention, mechanical or physical methods, cultural methods, biological control agents, or pesticides.*

*If there are no alternatives to pesticides, dischargers shall use the least toxic pesticide necessary to control the target pest.*

*b. Applying pesticides only when vector are present at a level that will constitute a nuisance*

*c. Using the least intrusive method of pesticide application.*

*d. Public education efforts to reduce potential vector breeding habitat.*

*e. Applying a decision matrix concept to the choice of the most appropriate formulation.*

These criteria are described in the NBVC IPM Program. No temephos is used on base. Most of the treatment on base is targeted at the larval stage. Very little adult stage mosquito control is done, and none near water.

## **12 Correct Use of Pesticides**

---

*Users Coalition's or Discharger's use of pesticides must ensure that all reasonable precautions are taken to minimize the impacts caused by pesticide applications. Reasonable precautions include using the right spraying techniques and equipment, taking account of weather conditions and the need to protect the environment.*

This is an existing practice of NBVC, and is required to comply in accordance with DoD Instruction 4150.07. All pesticide applicators receive annual safety and spill training in addition to their regular continuing education. All errors in application and spills are reported to the proper authority.

## **13 References**

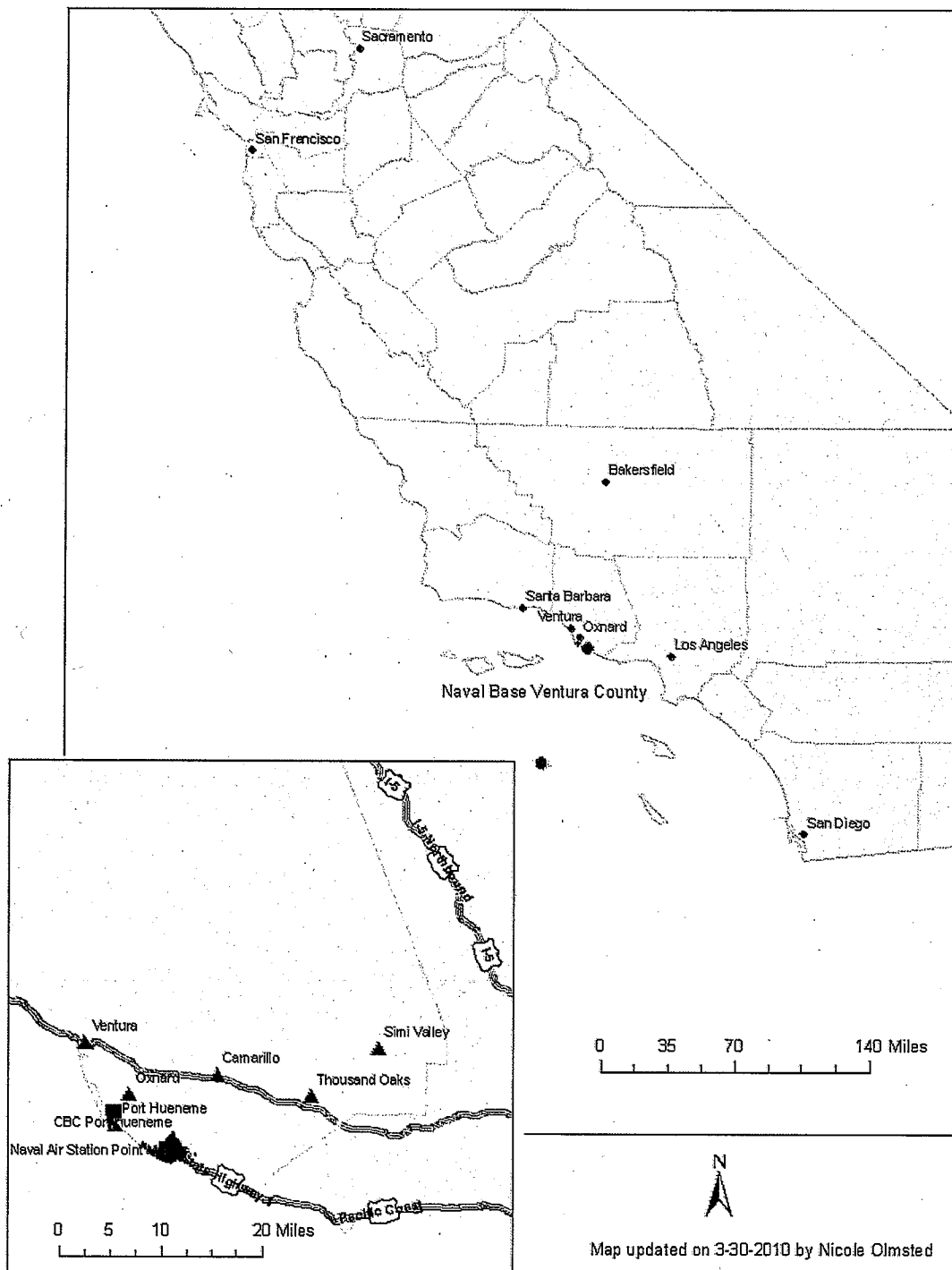
---

Naval Facilities Engineering Command Southwest (NAVFAC), 2010, Naval Base Ventura County Integrated Pest Management Plan (July 2010 Revision)

Department Of Defense (DoD), DoD Instruction 4150.07, the Pest Management Program (May 2008)

State Water Resources Control Board (SWRCB), 2011, Water Quality Order No. 2011-0002-DWQ, Statewide General National Pollutant Discharge Elimination System Permit For Biological and Residual Pesticide Discharges to Waters of Waters Of The United States From Vector Control Vector Control Applications (General Permit No. CAG 9900004).

# EXHIBIT 1: Naval Base Ventura County Location Map



Map updated on 3-30-2010 by Nicole Olmsted

**ENCLOSURE 3**

**FILING FEE**



# **INTEGRATED PEST MANAGEMENT PLAN July 2010**

## **NAVAL BASE VENTURA COUNTY, CALIFORNIA**



Prepared by  
Naval Facilities Engineering Command Southwest,  
San Diego, CA



## DOCUMENT IDENTIFICATION

**Document Title:** Integrated Pest Management Plan

**Site Name/Location:** Naval Base Ventura County, California

**Work Order No.:** 853632

**Document Coverage:** This document is the plan for conducting integrated pest management at Naval Base Ventura County, California

**Organization Title:** Naval Base Ventura County  
**Address:** 311 Main Road, Building 1  
NBVC Point Mugu, CA 93042-5033

**Navy Project Manager:** Michael Medina, M.S.  
**Address:** Naval Facilities Engineering Command Southwest  
Code EV53.MM  
1220 Pacific Highway  
San Diego, CA 92132-5190

## Naval Base Ventura County Integrated Pest Management Plan Approval and Implementation

Prepared by:

- Mr. Michael Medina, Applied Biologist / Pest Management Programs, Naval Facilities Engineering Command Southwest, Code EV51.MM, 1220 Pacific Highway, San Diego, CA 92132
- Ms. Valerie Vartanian, Integrated Pest Management Coordinator, Naval Base Ventura County, CA

**Technical and Administrative Approval:**

Approved and signed in accordance with DoDI 4150.07.



Ms. Valerie Vartanian  
Integrated Pest Management Coordinator

16 Sep 2011

Date



LCDR Gary C. Grothe Jr., MSC, USN, FACHE  
OIC, Naval Branch Health Clinic, Port Hueneme

16 Sep 2011

Date



Mr. Dan Shide  
Installation Environmental Program Manager

19 Sep 2011

Date



CDR M. L. Obermiller, USN  
Public Works Officer

14 NOV 2011

Date

**Approved for implementation:**



CAPT J. J. McHugh, USN  
Commanding Officer

14 NOV 11

Date

**This page left intentionally blank.**

## Naval Base Ventura County Integrated Pest Management Plan Technical Review

The Integrated Pest Management Plan has been reviewed in accordance with OPNAVINST 6250.4B.



---

Mr. Michael Medina, M.S.  
NAVFACENGCOM Professional Pest  
Management Consultant  
Naval Facilities Engineering Command  
Southwest, San Diego, CA

Date: 21 JUL 2010



---

Dr. William Tozer, PhD  
BUMED Professional Pest Management  
Consultant  
Navy Environmental and Preventive Unit FIVE,  
San Diego, CA

Date: 21 JUL 2010

**This page left intentionally blank.**

**INTEGRATED PEST MANAGEMENT PLAN REVIEW RECORD**

Year	Integrated Pest Management Coordinator (Annual)	Pest Management Consultant On-Site Review (as arranged)
12		
13		
14		
15		
16		

**This page left intentionally blank.**



# TABLE OF CONTENTS

TABLES AND FIGURES .....	viii
APPENDICES .....	viii
ABBREVIATIONS .....	ix
<b>Executive Summary .....</b>	<b>xiii</b>
<b>1 Introduction .....</b>	<b>1</b>
1.1 Background .....	1
1.2 The Integrated Pest Management Plan .....	3
1.3 Pest Management Program Overview .....	5
1.4 Regulatory Compliance .....	7
1.5 Program Requirements .....	10
1.6 References .....	10
<b>2 Administration .....</b>	<b>15</b>
2.1 Organization .....	15
2.2 Roles and Responsibilities .....	16
2.3 Staffing and Facilities .....	18
2.4 Training, Certification and Licensing .....	19
2.5 Pesticide Approval .....	22
2.6 Records and Reporting .....	22
2.7 Government Contracts .....	23
2.8 Private Housing Contracts .....	26
2.9 Self-help .....	27
2.10 References .....	28
<b>3 Operations .....</b>	<b>29</b>
3.1 Integrated Pest Management .....	29
3.2 Pests on NBVC .....	30
3.3 Pest Management Operations .....	32
3.4 Pesticide Management .....	37
3.5 References .....	41
<b>4 Health and Safety .....</b>	<b>43</b>
4.1 Pesticide Applicator Safety .....	43
4.2 Public Safety .....	46
4.3 Pest Control Accidents .....	48
4.4 References .....	48
<b>5 Environmental Considerations .....</b>	<b>51</b>
5.1 Environmental Management System (EMS) for Pesticides .....	51
5.2 Environmental Considerations on the Pesticide Label .....	52
5.3 Managing Environmental Impact .....	52
5.4 References .....	59
<b>6 Emergency Pest Management .....</b>	<b>61</b>
6.1 Public Health Emergencies .....	61
6.2 Agricultural Emergencies .....	61
6.3 Emergency Pest Management Resources .....	62
6.4 References .....	62
<b>7 Program Resources .....</b>	<b>63</b>
7.1 Agencies .....	63
7.2 Publications .....	64

## TABLES AND FIGURES

Figure 1-1	NBVC Point Mugu from Laguna Peak. (U.S. Navy photo)	Page 1
Table 1-1	Pest Management Program Review Schedule	Page 5
Table 1-2	The NBVC Pest Management Service Providers	Page 6
Table 1-3	Pest Management Program Administration Requirements	Page 11
Table 1-4	Pest Management Program Operations Requirements	Page 13
Figure 2-1	The NBVC Pest Management Organization	Page 15
Table 2-1	The NBVC Pest Management Licensing and Recertification Training Requirements	Page 22
Table 2-2	Common Performance Levels (CPL) for Pest Control Services	Page 25
Table 3-1	Comparison of Traditional Pest Control and IPM Methods	Page 30
Figure 3-1	Pests by number of pest management service records, NBVC Port Hueneme, 2009.	Page 31
Figure 3-2	Pests by number of pest management service records, NBVC Point Mugu, 2009.	Page 31
Figure 3-3	Herbicide control of iceplant on NBVC Point Mugu. (U.S. Navy photo)	Page 35
Table 3-2	Quantity of pesticide active ingredients used on NBVC in 2009..	Page 38
Figure 5-1	Mugu Lagoon. (U.S. Navy photo)	Page 51
Table 5-1	Natural resources protection and pest management.	Page 54
Table 5-2	Federally Threatened and Endangered Species on NBVC.	Page 56
Table 5-3	Sensitive species on NBVC.	Page 57

## APPENDICES

A	Maps
B	Definitions
C	Laws
D	Program Review
E	Pesticides
F	Equipment
G	Contracts
H	Pest Management Operations
I	Environmental
J	Medical
K	Licenses
L	Resources
M	Mosquito Control Plan

Cover and title page photographs are US Navy photos.

## ABBREVIATIONS

<b>AB</b>	Applied Biology
<b>AFPMB</b>	Armed Forces Pest Management Board
<b>APHIS</b>	Animal and Plant Health Inspection Service (USDA)
<b>APP</b>	Application of Pesticides Plan
<b>BASH</b>	Bird Aircraft Strike Hazard
<b>BHC</b>	Branch Health Clinic
<b>BOS</b>	Base Operation Support
<b>BOSC</b>	Base Operation Support Contract
<b>BUMED</b>	Navy Bureau of Medicine and Surgery
<b>CAA</b>	Clean Air Act
<b>CAC</b>	County Agricultural Commissioner
<b>Cal/EPA</b>	California Environmental Protection Agency
<b>CCR</b>	California Code of Regulations
<b>CDC</b>	Centers for Disease Control and Prevention
<b>CDFA</b>	California Department of Food and Agriculture
<b>CDPH</b>	California Department of Public Health
<b>CDPR</b>	California Department of Pesticide Regulation
<b>CFR</b>	Code of Federal Regulations
<b>CNIC</b>	Commander Naval Installations Command
<b>CNO</b>	Chief of Naval Operations
<b>CNRSW</b>	Commander Navy Region Southwest
<b>CO</b>	Commanding Officer
<b>COMPACFLT</b>	Commander, Pacific Fleet
<b>COR</b>	Contracting Officer Representative
<b>CWA</b>	Clean Water Act
<b>CWP</b>	Contractor Work Plan
<b>DeCA</b>	Defense Commissary Agency
<b>DFG</b>	California Department of Fish and Game
<b>DH</b>	Department Head
<b>DivO</b>	Division Officer
<b>DoD</b>	Department of Defense
<b>DoN</b>	Department of the Navy
<b>DoT</b>	Department of Transportation
<b>DVEP</b>	Disease Vector Ecology Profile
<b>EA</b>	External Assessment
<b>EC</b>	Emulsifiable Concentrate
<b>ECE</b>	Environmental Compliance Evaluation
<b>EH</b>	Environmental Health
<b>EHO</b>	Environmental Health Officer
<b>EIS</b>	Environmental Impact Statement
<b>ED</b>	Environmental Division
<b>EMS</b>	Environmental Management System
<b>EO</b>	Executive Order
<b>EPA</b>	U.S. Environmental Protection Agency
<b>EPCRA</b>	Emergency Planning and Community Right to Know Act
<b>EPS</b>	Environmental Protection Specialist
<b>EQA</b>	Environmental Quality Assessment
<b>ESA</b>	Endangered Species Act

<b>ET</b>	Endangered and threatened
<b>EVDCP</b>	Emergency Vector-borne Disease Control Plan
<b>FDA</b>	U.S. Food and Drug Administration
<b>FEAD</b>	Facilities Engineering and Acquisition Division
<b>FIFRA</b>	Federal Insecticide, Fungicide, and Rodenticide Act
<b>FQPA</b>	Food Quality Protection Act
<b>FSC</b>	Facility Support Contract
<b>HMMS</b>	Hazardous Materials Management System
<b>HSWA</b>	Hazardous and Solid Waste Act
<b>IAP</b>	Internal Assessment Plan
<b>ICP</b>	Integrated Contingency Plan
<b>ICRMP</b>	Integrated Cultural Resources Management Plan
<b>IECP</b>	Integrated Environmental Compliance Plan
<b>IEPM</b>	Installation Environmental Program Manager
<b>IHO</b>	Industrial Hygiene Officer
<b>INRMP</b>	Integrated Natural Resources Management Plan
<b>IPM</b>	Integrated Pest Management
<b>IPMC</b>	Integrated Pest Management Coordinator
<b>IPMP</b>	Integrated Pest Management Plan
<b>KO</b>	Contracting Officer
<b>MAD</b>	Mosquito Abatement District
<b>MCCS</b>	Morale, Welfare and Recreation
<b>MCO</b>	Marine Corps Order
<b>MOA</b>	Memorandum of Agreement
<b>MOU</b>	Memorandum of Understanding
<b>MSC</b>	Medical Service Corps
<b>MSDS</b>	Material Safety Data Sheet
<b>MTF</b>	Medical Treatment Facility
<b>NAF</b>	Naval Air Facility
<b>NAFI</b>	Non-appropriated fund instrumentality
<b>NAVAIR</b>	Naval Air Systems Command
<b>NAVFAC</b>	Naval Facilities Engineering Command
<b>NAVFAC Southwest</b>	Naval Facilities Engineering Command Southwest
<b>NAVOSH</b>	Navy Occupational Safety and Health
<b>NB</b>	Naval Base
<b>NBVC</b>	Naval Base Ventura County
<b>NDSL</b>	Navy Drug Screening Laboratory
<b>NECE</b>	Navy Entomology Center of Excellence
<b>NEPMU-5</b>	Navy Environmental and Preventive Medicine Unit FIVE, San Diego, CA
<b>NEPPS</b>	National Environmental Performance Partnership System
<b>NEX</b>	Navy Exchange
<b>NGIS</b>	Navy Gateway Inns and Suites (Unaccompanied Personnel Housing)
<b>NMCI</b>	Navy and Marine Corps Intranet
<b>NMCPHC</b>	Navy and Marine Corps Public Health Center
<b>NMCSD</b>	Naval Medical Center San Diego
<b>NOSC</b>	Navy Operational Support Center
<b>NS</b>	Naval Station

<b>NSHS</b>	Naval School of Health Sciences
<b>OIC</b>	Officer in Charge
<b>OPNAVINST</b>	Chief of Naval Operations Instruction
<b>ORM</b>	Operational Risk Management
<b>OSHA</b>	Occupational Safety and Health Agency
<b>P2</b>	Pollution Prevention
<b>PCO</b>	Pest control operator
<b>PCPAR</b>	Pest Control Performance Assessment Representative (formerly QAE)
<b>PMO</b>	Provost Marshal Office (Security)
<b>PMR</b>	Preventive Medicine Representative
<b>PMSP</b>	Pest Management Service Provider
<b>PMT</b>	Preventive Medicine Technician
<b>POC</b>	Point of contact
<b>PPA</b>	Pollution Prevention Act
<b>PPE</b>	Personal protective equipment
<b>PPMC</b>	Professional Pest Management Consultant
<b>PW</b>	Public Works
<b>QAC</b>	Qualified Applicator Certificate
<b>QAL</b>	Qualified Applicator License
<b>RCC</b>	Reserve Readiness Command
<b>RCI</b>	Residential Communities Initiative
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>ROICC</b>	Resident Officer in Charge of Construction
<b>RT</b>	Residual toxicity
<b>RUP</b>	Restricted use pesticide
<b>SA</b>	Special Area
<b>SECNAVINST</b>	Secretary of the Navy Instruction
<b>SOP</b>	Standard Operating Procedure
<b>SPAR</b>	Senior Performance Assessment Representative
<b>SPCB</b>	Structural Pest Control Board
<b>SPCC</b>	Spill Prevention, Control and Countermeasure Plan
<b>SWDMP</b>	Stormwater Discharge Management Plan
<b>SWPPP</b>	Stormwater Pollution Prevention Plan
<b>TG</b>	Technical Guide
<b>TOC</b>	TriCare Outpatient Clinic
<b>TSCA</b>	Toxic Substances Control Act
<b>ULV</b>	Ultra Low Volume
<b>USA</b>	United States Army
<b>USDA</b>	U.S. Department of Agriculture
<b>USFS</b>	U.S. Forest Service
<b>USFWS</b>	U.S. Fish and Wildlife Service
<b>USMC</b>	United States Marine Corps
<b>USN</b>	United States Navy
<b>USPHS</b>	U.S. Public Health Service
<b>VCD</b>	Vector Control District
<b>WP</b>	Wettable Powder
<b>XO</b>	Executive Officer

**This page left intentionally blank.**

## **Executive Summary**

The Integrated Pest Management Plan (IPMP) is a comprehensive, long-range document that captures all the pest management and pesticide-related activities conducted on the Naval Base Ventura County (NBVC) property. Pest management activities on NBVC provide Force Health Protection, maintain facilities, protect environmental resources, and improve personnel quality of life to ensure that the NBVC accomplishes its U.S. Pacific Fleet support mission. The pest management program includes pest control and grounds maintenance for administrative and industrial facilities, lessee pest control, and natural resources protection. This plan adds value by developing compliance systems and streamlining operations involving the use of pesticides including applications, storage, and the archiving of records all of which are tightly regulated by FIFRA, state and local laws, DoD, and Navy regulations. As a planning document, the IPMP is also a vital component of effective integrated pest management (IPM).

This Plan is the Five Year Rewrite of the Pest Management Plan written in 2003. Significant changes to the installation that have required this rewrite include the addition of San Nicolas Island to NBVC, privatization of military family housing, regulatory updates and changes to the pest control and grounds maintenance contracts. The Naval Facilities Engineering Command Southwest (NAVFAC Southwest) Applied Biology (AB) Program, San Diego, California, prepared this plan from December 2009 - May 2010. This document provides comprehensive information on the installation's pest and pesticide management program for installation staff and internal and external compliance auditors. It incorporates specific pest management practices and local, State, Federal and Department of Defense regulations. The Plan conforms to the requirements of DoD Instruction 4150.07, OPNAVINST 6250.4B, and OPNAVINST 5090.1C.

**This page left intentionally blank.**



# 1 Introduction

## 1.1 Background

### 1.1.1 Mission

The mission of Naval Base Ventura County (NBVC) is to provide integrated shore services to support the diverse needs of the Fleet, Fighter & Family in Ventura County.

### 1.1.2 Location and Facilities

NBVC is located in Ventura County on the central coast of California between Santa Barbara and Los Angeles. It is comprised of three major Navy locations: San Nicolas Island, Port Hueneme and Point Mugu. It also includes outlying areas such as Camarillo Airport and Laguna Peak.

#### 1.1.2.1 *NBVC Point Mugu*

NBVC Point Mugu is located in Ventura County, California, about 50 miles northwest of Los Angeles. NBVC Point Mugu's closest neighboring communities are Oxnard, Camarillo, Newbury Park, Thousand Oaks, Port Hueneme, and Ventura. Immediately north and northwest of NBVC Point Mugu are two duck hunting clubs: the Point Mugu

Game Reserve and the Ventura County Game Reserve. The Pacific Ocean and Ormond Beach lie directly south and west of the site, respectively.

There are more than 40 tenant commands at NBVC Point Mugu, including 12 of the major military commands. Independent goals and individual mission statements guide the activities of these base tenants. Several of these tenants also play significant roles in management of natural resource activities on the base, both by their effects on natural resources and the effects of natural resources on their missions.

The mission of NBVC Point Mugu is to provide "world class aviation support to a diverse group of tenant commands with various



**Figure1-1: NBVC Point Mugu from Laguna Peak. (U.S. Navy photo)**

aircraft test platforms and airframes homeported at NBVC Point Mugu and support of Department of Defense and transient aviation organizations" (Benchmark Publications 2000).

The goals of this installation which reflect this core purpose are:

- To support the military needs in the primary mission to provide full-service weapons testing and evaluation for the Navy and DoD.
- To support the military needs for air operations and provide full-service fleet support.
- To be an outstanding host to tenant commands so that they will be able to accomplish their missions.
- To maintain a high quality of life and satisfaction within the NBVC Point Mugu community.

#### 1.1.2.2 *NBVC Port Hueneme*

NBVC Port Hueneme is located on the coast of Ventura County, California, adjacent to the cities of Port Hueneme and Oxnard. NBVC Port Hueneme is bordered by the City of Oxnard to the north, the City of Port Hueneme to the east, and is adjacent to Channel Islands Harbor on the west.

NBVC Port Hueneme was established early in the Second World War (1942) to train, stage, and supply the Seabees. As the only Navy deep-water port between San Diego and Seattle, the Port of Hueneme has served as a major shipping and staging center for construction equipment and material providing integral mobilization support to military operations. The site has provided peacetime support to the Seabees, and served the Navy as a major port throughout the Second World War, the Korean War, the Vietnam War and the 1990 conflict in the Middle East. The mission of NBVC Port Hueneme is similar to its mission in 1942: to provide a homeport and to furnish training, administrative, and logistic support for Seabees serving in many parts of the world (U.S. Navy 1998a from draft PH IRMP). "Seabee" is the name given to the Navy's Construction Battalions and the personnel that make up these units. Support includes:

- Storage and ship advancement of mobilization construction materials, equipment, and provisions.
- Training personnel for construction battalions and performing engineering and technical services.
- Procurement, storage, maintenance and disposal of the construction equipment and materials that make up the Propositioned War Reserve Material Stocks.
- Logistical support to more than 40 tenant commands with missions ranging from Seabee support to shipboard missile systems testing.

#### 1.1.2.3 *NBVC San Nicolas Island*

San Nicolas Island (SNI) was put under administrative control of NBVC in October 2004. NBVC began providing pest control services through the FSC/BOS contract on 01 October 2009. The Partner Pest Management Plan for NBVC San Nicolas Island is found in appendix H. Primary Naval operations on SNI are composed of test and evaluation of internal and external missile data systems using radar, telemetry, and photography.

#### 1.1.3 Tenant Organizations

NBVC Port Hueneme

- Center for Seabees & Facilities Engineering (CSFE)
- Defense Contract Management Agency
- Detachment 1, 345th TRS USAF
- Document Automation & Production Service (DAPS)
- Engineering Duty Officer School
- Mobile Utilities Support Equipment (MUSE)
- Naval Ambulatory Care Center
- Naval Civil Engineer Corps Officers School (NCECOS)
- Naval Construction Force Support Unit Two
- Naval Construction Training Center (NCTC)
- Naval Facilities Acquisition Center for Training (NFACT)
- Naval Facilities Engineering Service Center (NFESC)
- Naval Facilities Expeditionary Logistics Center (NFELC)
- Navy Operational Support Center Port Hueneme
- NAVSEA Port Hueneme Surface Warfare Center Division
- NAVSEA Supervisor of Salvage and Diving
- Navy Cargo Handling Battalion 14
- NMCB-3
- NMCB-4
- NMCB-5
- NMCB-40

- Personnel Support Detachment
- Underwater Construction Team (UCT) TWO
- U.S. Naval Construction Force (NCF)
- U.S. Navy Seabee Museum
- 1st Naval Construction Regiment
- 30th Naval Construction Regiment
- 31st Seabee Readiness Group

NBVC Point Mugu:

- Commander, Airborne Command Control and Logistics Wing
- Fleet Readiness Center South West - Site Mugu
- NAVAIR Weapons Division
- Navy Facilities Engineering Command (NAVFAC)
- Navy Operational Support Center
- Naval Computer & Telecommunications Station San Diego - Ventura County Site
- Naval Satellite Operations Center (NAVSOC)
- VAW - 112
- VAW-113
- VAW-116
- VAW-117
- VR-55
- VX-30

NBVC San Nicolas Island:

- NAVAIR Weapons Division
- Navy Facilities Engineering Command (NAVFAC)

## 1.2 The Integrated Pest Management Plan

### 1.2.1 Scope

The NBVC IPMP is a long-range, comprehensive planning and operational document that establishes the procedures for conducting a safe, effective, and environmentally sound integrated pest management program. This IPMP covers all pest management and pesticide-related activities conducted by civilian and military Department of Defense (DoD) personnel, commercial pest management service providers (PMSP), and lessees on NBVC including tenant commands.

### 1.2.2 Implementation Authority

OPNAVINST 6250.4B and OPNAVINST 5090.1C, Chapter 17 require all Navy activities that conduct pest management operations to have an IPMP. Pest management programs at Navy activities shall be conducted under an IPMP in accordance with DoDINST 4150.07 and OPNAVINST 6250.4B.

### 1.2.3 DoD Measures of Merit

This Plan provides the framework for the NBVC to meet the DoD's annual goals or measures of merit (MoM). Per DoDI 4150.07, the MoMs are:

- Goal 1. 100% of DoD installations will have current pest management plans. NBVC helps meet this goal by the implementation (by Commanding Officer signature) of this Plan.
- Goal 2. Maintain the 55% pesticide use reduction achieved from 1993-2003 (in pounds of active ingredient). NBVC provides data for this MoM through the reporting requirement (Section 2.6.2)
- Goal 3. 100% of all DoD installation pesticide applicators will be appropriately certified. NBVC ensures proper certification of all applicators through regular verifications and maintains a list of certifications in Appendix K of this Plan. See section 2.4 for training and certification requirements.

#### 1.2.4 Using the IPMP

The IPMP provides a comprehensive overview of pest management and pesticide related operations on the NBVC. It can be used as a reference by all installation personnel and can be provided to external pesticide regulators. The IPMP is divided into the core plan and appendices. The Plan is provided in a hard copy and electronic form.

##### 1.2.4.1 *Core*

- Chapter 1. **Introduction:** Provides an overview of the IPMP and the installation pest management program. Federal and State regulatory compliance is described to provide the source of the compliance requirements in the rest of the Plan.
- Chapter 2. **Administration:** Describes the organization of the pest management program and identifies the staffing and their roles and responsibilities. This section also lists and describes the primary DoD requirements for DoD and contract PMSPs.
- Chapter 3. **Operations:** Provides detailed descriptions of integrated pest management practices on the installation and the management of pesticides. Compliance requirements for all the operational practices are provided.
- Chapter 4. **Health and Safety:** Describes the potential health hazards for the pesticide applicators as well as the public due to pest management operations on the installation. Hazard abatement practices and medical emergencies are also discussed.
- Chapter 5. **Environmental Considerations:** Describes the pest management program within the framework of Environmental Management Systems (EMS) including a description of hazards to the environment of chemical and non-chemical practices.
- Chapter 6. **Emergency Pest Management:** Provides a description of and resources in the event of public health or agricultural pest management emergencies.
- Chapter 7. **Resources:** A list of DoN and local resources for pest management issues.

Each chapter contains a reference section with publications and websites used to prepare the Plan and others that provide additional information. Where appropriate references are cited in the text of the chapter and indicated by the reference number in parentheses at the end of the sentence. Most of the publications can be found on the CD that accompanies the IPMP.

##### 1.2.4.2 *Appendices*

The contents of the appendices are designed to be modified depending on the needs of the PMSP or stakeholder that possesses the IPMP. Some of the contents are included in the binder while others are in electronic form on the CD.

- Appendix A. Includes the NBVC location map and space for installation maps.
- Appendix B. Contains a list of definitions for words and terms used in the IPMP.
- Appendix C. Provides a list of Federal laws, State regulations, DoD instructions, and installation instructions / orders related to pest management. Copies of DoDI 4150.07, OPNAVINST 6250.4 B, and MCO 5090.2A / OPNAVINST 5090.1C are included. Other regulatory and policy documents related to the installation program are also included.
- Appendix D. Provides space for copies of pest management program reviews and compliance inspection reports. DoD and State compliance checklists and IPMP update forms are also included.
- Appendix E. The approved pesticides lists for each of the installation's PMSPs are included in this appendix. Pesticide labels and MSDSs can be added to this appendix.
- Appendix F. A list of equipment used by PMSPs is included. This appendix can be used for equipment maintenance records, manuals, or other related documents.
- Appendix G. Use this appendix to keep contract information including contract specifications and the contractor's work plan.
- Appendix H. Integrated Pest Management Project Summaries for each of the pests or pest groups found on the installation are included here. SNI Partner PMPs is included here.

- Appendix I. Contains installation-specific EMS documents. Installation environmental plans or excerpts of plans that pertain to pesticides and pest management are included as well.
- Appendix J. Contains the installation Emergency Vector Control Plan and other documents related to vector surveillance and control. If the installation has a pest control shop, reports of industrial hygiene surveys may also be included.
- Appendix K. Space is provided for applicator licenses and certifications and training records.
- Appendix L. An installation point of contact sheet is provided. Forms for managing the program are included here. Additional resources can be added.
- Appendix M. Mosquito surveillance and control plan.

1.2.4.3 *CD-ROM*

Electronic versions of the Plan are provided. This includes the core plan and all appendices as well as the full contents of the NAVFAC Southwest Pest Management Resource CD-ROM which includes downloadable forms and templates, pest management technical guides and handbooks, DoD directives, and pest management website links. Only the IPMC receives the “Master” CD-ROM that contains a Microsoft® Word™ version of the core plan. PMSPs will receive the “User” version that contains the core plan in Adobe® Acrobat™ format. Both versions will contain forms and templates in their original format.

1.2.5 Plan Maintenance

The IPMP must be reviewed and updated annually (OPNAVINST 6250.4B, Encl (2), pg 5). The installation pest management coordinator is responsible for reviewing and updating the plan. The schedule for Plan and Program review, per OPNAVINST 6250.4B is:

**Table 1-1: Pest Management Program Review Schedule**

<b>Sep 2011</b>	Annual internal review and update of the IPMP by the installation pest management coordinator (IPMC). Use the IPMP annual update form in Appendix D.
<b>Sep 2012</b>	Off-site review where the installation pest management coordinator forwards the IPMP to the NAVFAC Southwest Professional Pest Management Consultant (PPMC) who reviews and updates the plan in coordination with the Navy Bureau of Medicine and Surgery (BUMED) PPMC to ensure the IPMP is current.
<b>Sep 2013</b>	On-site program review of the entire Pest Management (PM) program shall be conducted by the NAVFAC Southwest PPMC.

**1.3 Pest Management Program Overview**

1.3.1 Overview

The pest management program is summarized below. Table 1-2 lists the installation pest management service providers (PMSP):

- The installation Natural Resources Specialist is designated as the Integrated Pest Management Coordinator (IPMC).
- Pest control for most of the NBVC facilities is performed by the Base Operation Service (BOS) contractor, Pride Industries. Facilities that are not serviced by this provider are military family housing (MFH) managed by Lincoln Military Housing. Pest control on SNI is provided by Acepex.
- Mosquito control is conducted by Pride Industries.
- Grounds maintenance is performed by a NISH contractor, VTC. This includes weed control and rodent control in landscaped areas.

- Most of the military family housing is managed by Lincoln Military Housing. They are responsible for maintenance of the residences and provide household and landscape pest control services through Orkin and Valley Crest Landscaping. The 801 Lease housing on NBVC Port Hueneme and several parcels in the Santa Cruz housing area on NBVC Point Mugu are still DoD managed and serviced by the BOS pest control and NISH grounds maintenance contractors.
- MWR employs a DoD-certified golf course superintendent to manage the turf at the golf course on NBVC Port Hueneme and the driving range at NBVC Point Mugu.
- The Natural Resources program uses a regional contractor for invasive plant management: Innovative Inclosures, but also maintains a self-help program for small area invasive weed control. They also have a cooperative agreement with USDA Wildlife Services for pigeon and other bird control as part of the Bird Aircraft Strike Hazard (BASH) program. Tetratex provides predator management.
- The Navy Exchange (NEX) displays and sells a small quantity of garden and household pesticides. The Commissary sells only a small quantity of household pesticides and insect repellents.
- The Branch Medical Clinic at NBVC Port Hueneme performs food service sanitation and facilities habitability inspections and oversees programs to prevent vector-borne and other infectious diseases at all of the installations.

<b>Table 1-2: NBVC Pest Management Service Providers</b>		
<b>PMSP</b>	<b>Type</b>	<b>Facilities / Areas Served</b>
Pride Industries	Industrial and structural pest control; mosquito control	All installation facilities except privatized military family housing
VTC	Landscape pest and weed control	All installation improved and semi-improved grounds, including roadways, landscaped areas, lawns, sidewalks, and paths; except privatized MFH
Acepex	Custodial and Pest Services	NBVC San Nicolas Island
Orkin Pest Management Services	Housing residential and landscape pest control	Lincoln Military Family Housing
Valley Crest Landscaping	Residential landscape maintenance	Lincoln Military Family Housing
MWR Golf Course	Turf management	NBVC Port Hueneme golf course and NBVC Point Mugu driving range
Innovative Inclosures	Invasive and noxious weed control	Unimproved grounds throughout installation

**Table 1-2: NBVC Pest Management Service Providers**

<b>PMSP</b>	<b>Type</b>	<b>Facilities / Areas Served</b>
USDA Wildlife Services	Pigeon and other nuisance wildlife management	Operations and administration areas
Self-help – Natural Resources	Invasive weeds	Natural areas
Branch Health Clinic Preventive Medicine	Food service and habitability inspections; mosquito surveillance	All food service and other facilities; NBVC Point Mugu (mosquito surveillance)

In addition to the PMSPs, individual personnel including employees and housing tenants have a responsibility for preventing and reducing pest infestations in their workplace and/or berthing/residence areas. This IPMP encompasses all of the activities of the PMSPs and individuals.

**1.3.2 Pest Management Objectives**

The pest management objectives for each objective, at the NBVC are:

1. Force health protection for military personnel, dependents, DoD and contractor employees, retirees and visitors.
2. Protect all buildings, other real property, aircraft, and equipment from damage caused by pests.
3. Enhance Force Protection and wildfire protection through weed management.
4. Protect Federally-listed species as required by the Endangered Species Act (ESA) through management and control of invasive species.
5. Prevent introduction of invasive plants, disease vectors and nuisance pests onto NBVC San Nicolas Island.
6. Enhance quality of life through pest prevention.

**1.3.3 Environmental Policy**

In addition to the pest management objectives, the program should conform to the objectives of the installation’s environmental policy to support “mission readiness through environmental stewardship”. A copy of the policy is in Appendix I. Pest management environmental objectives are:

- Reduce pesticide pollution that affects the installation’s neighbors through the use of IPM to prevent adverse impact on air, water, and land resources.
- Use IPM to preserve aspects of the natural environment by managing and controlling invasive and nuisance pests and preventing pesticide pollution.
- Ensure and maintain the competence of pest management personnel through certification and training to enable these personnel to use effective technologies and methods to control pests while preserving the environment.
- Enable the Integrated Pest Management Coordinator to maintain effective oversight and coordination of the program and liaison with local agencies in order to ensure regulatory compliance.

**1.4 Regulatory Compliance**

**1.4.1 Policy**

The Department of Defense policy is to ensure DoD pest management programs achieve, maintain, and monitor compliance with all applicable Executive Orders and applicable Federal, State, and local statutory and regulatory requirements. When there is a conflict between Federal and local regulations, the installation will comply with the more stringent of the two. This commonly occurs with pesticides limited for use by the State of California, which are not

necessarily restricted by the EPA. In this case, the installation must comply with California regulations.

#### 1.4.2 Laws and Regulations

##### 1.4.2.1 *Primary Pesticide Regulations*

- Federal: U.S. Code of Federal Regulations (CFR) at 40 CFR Section E, 152-180: Pesticide Programs.
- DoD, Navy and Marine Corps: DoD 4150.07, DoD Pest Management Program; OPNAVINST 6250.4B, Pest Management Programs; OPNAVINST 5090.1C, Environmental Readiness Program Manual
- California: California Code of Regulations (CCR) Title 3 Division 6

##### 1.4.2.2 *The Pesticide Label*

The primary source of pesticide regulations for the pesticide applicator is found on the pesticide label in accordance with 40 CFR 156. California may add supplementary labels, which are regulations that must be complied with in the State. **It is a violation of Federal and/or State law to use a pesticide in a manner inconsistent with the label.** Note, however, that the pesticide label does not provide specific information for each site where the pesticide may be applied. For example, the pesticide label may allow application of an herbicide to unimproved grounds, but if those grounds are within an endangered species habitat, then pesticide use may be restricted under the Endangered Species Act. Pesticide applicators should be aware of environmentally sensitive areas before beginning any new pesticide application and should contact the Environmental Division (ED). See Chapter 5 for specific environmental restrictions and requirements.

##### 1.4.2.3 *Other Regulations*

Other applicable directives, laws and regulations concerning pesticide applications and pest management operations are listed and described in Appendix C.

#### 1.4.3 Pesticide Regulation and Enforcement

##### 1.4.3.1 *Pesticide Regulation*

The U.S. Environmental Protection Agency (EPA) has the primary authority to regulate pesticides in the U.S. The EPA delegates pesticide enforcement authority to states through cooperative agreements. In California, the Department of Pesticide Regulations (DPR), a department of the California Environmental Protection Agency (Cal/EPA) provides the enforcement infrastructure, which is delegated to the County Agricultural Commissioners (CAC). However, the DPR and CACs have only limited authority to regulate pesticides on federal facilities including military installations on DoD property. OPNAVINST 6250.4B requires Navy and Marine Corps installations to comply with state and local pesticide use regulations. However, the state or county cannot directly enforce pesticide use under FIFRA by federal employees on federal facilities. Nor can the State impose civil penalties against federal agencies or personnel for violations of state pesticide laws on federal facilities. However, persons using pesticides in a manner not in compliance with the label are not completely absolved from responsibility for misuse of a toxic material. Personnel contracted to apply pesticides on federal property are subject to different laws and policies and are not protected in this manner. DPR policies on pesticide use regulations on federal facilities are stated in DPR Enforcement Letter ENF 99-037 (see Appendix C) of 01 Oct 1999. This policy states that the DPR and CACs do have authority to directly regulate private (non-federal) persons who conduct pest control activities on DoD installations under contract to the DoN or other federal agency or the operator of the installation. DPR and CACs can impose penalties on private persons for violations of state pesticide laws.

Executive Order 12088, "Federal Compliance with Pollution Control Standards", does not provide DPR or CACs with authority to compel federal agencies' compliance with state pesticide laws or to take civil penalty actions. It does, however, allow state and local agencies to request the Administrator of U.S. EPA to resolve conflicts that arise concerning federal agency compliance



with state and local pollution control standards. DPR policy states that the following pollution control standards are within the context of the Executive Order:

- The pesticide registration program;
- The restricted material permit program;
- The pesticide storage, transportation, and disposal program;
- The general standards of care regarding pesticide applications listed in Title 3 of the California Code of Regulations (CCR), sections 6600, and 6602-6616;
- The ground and surface water protection programs; and
- The toxic air contaminants program.

States can enforce pesticide use as regulated by other State enforced Federal Laws such as the Clean Water Act (CWA), Resource Conservation and Recovery Act (RCRA), Endangered Species Act (ESA) and Clean Air Act (CAA). Also, current immunity from state regulation of pesticide use does not preclude the possibility of legal ramifications in the future. Base Realignment And Closure (BRAC) may result in the transfer of DoD properties to state, county, or private entities. Contamination of these properties resulting from improper past pesticide use may result in high costs associated with environmental remediation or legal actions against the DoD.

#### 1.4.3.2 *Compliance Assessments*

Internal program assessments should be conducted by the IPMC. Appendix I contains an internal assessment plan (IAP) and Appendix D contains compliance self-assessment checklists. External environmental quality assessments (EQA) are conducted by Naval Installations Command (NIC). The NAVFAC Southwest PPMC has no enforcement authority but can provide the installation with technical assistance for compliance. The PPMC is required to conduct a review of pest management operations every 24 to 36 months per OPNAVINST 6250.4B. The purpose of this review is to monitor conformance with the IPMP and to provide assistance in updating the plan. The reviews can also be used to provide recommendations for preparing for compliance inspections / assessments and to correct findings and deficiencies from past EQAs.

#### 1.4.3.3 *Enforcement*

Since the State does not have the authority to enforce FIFRA on the installation, the responsibility for compliance and enforcement lies with the CO. As the CO's pest management advisor, the IPMC shall be familiar with federal, state and local pesticide use regulations and ensure that the PMSPs conduct operations in compliance with these regulations. Regulatory enforcement for each of the PMSPs is provided.

- Commercial applicators: PCPARs shall provide assistance by monitoring contract PMSPs for compliance with all applicable regulations as specified in the contract and will recommend appropriate actions to the contracting officer if the contractor does not comply. The installation is encouraged to report violations by contractors to the county agricultural commissioner (CAC), therefore the IPMC should maintain liaison with the CAC. The CAC will investigate pesticide-poisoning incidents and will take appropriate compliance or enforcement action against commercial applicators found responsible for an incident. PMTs conducting inspections of food service facility pest management programs can also ensure compliance for safe pesticide use and applicator licensing / certification (Inspection guidelines are found in NAVMED P-5010 Chapters 1 and 8).
- DoD and State certified applicators: The pesticide applicator's immediate supervisor, with the assistance of the IPMC, shall also ensure that pesticide use is in compliance. Under the authority of DoD Instruction (DoDI) 4150.07 and DoD Directive 5134.01 and per DoD 4150.07-M, Vol. 1, the DoD may deny, suspend, or revoke the certificate of any DoD employee who violates any provision of FIFRA or falsifies records under DoD 4150.07-M, Vol. 1. In accordance with DoD 4150.07-M, Vol. 1, the installation CO may initiate a formal review if FIFRA violations are suspected. Violations shall be reported through appropriate command channels to the NAVFACSW certifying authority for review. The certifying authority shall determine if further action is required. That action may include suspension of the applicator's certification. See DoD 4150.07-M, Vol. 1 for more information.

## 1.5 Program Requirements

### 1.5.1 Administration

Administration of the pest management program involves the documentation of pest management activities on the installation for the purpose of implementing IPM and ensuring that only qualified personnel apply pesticides. Table 1-3 outlines the pest management program requirements.

### 1.5.2 Operations

Operations are the actual execution of pesticide and pest management activities. Pest management on the NBVC includes the following categories of operations:

1. **Ornamental and Turf** – Control and management of weeds and arthropod, vertebrate, nematode, and disease pests in landscaped areas and on turf.
2. **Right-of-Way** – Weed control along fencelines, roadways, airfield runways, taxiways, and sidewalks.
3. **Noxious Weed Control** – Control of weeds that are detrimental to be endangered and threatened species' habitats.
4. **Industrial, Institutional, Structural, and Health-Related** - Control and management of pests in and around buildings. Pests include rodents, flies, ants, spiders and a variety of household pests. This also includes nuisance bird management and animal control.
5. **Public Health** - Control and management of human and animal disease vectors such as rodents and mosquitoes.

Each of these operations must meet requirements that are listed and described in Table 1-4.

## 1.6 References

1. Armed Forces Pest Management Board Pest Management Measures of Merit - <http://www.afpmb.org/moms/moms.htm>
2. Armed Forces Pest Management Board (AFPMB) Technical Guide (TG) 18: Pest Management Installation Program Guide - <http://www.afpmb.org/pubs/tims/tg18/tg18.pdf> (CD)
3. California Code of Regulations (CCR) Title 3, Division 6: Pesticides and Pest Control Operations - <http://www.cdpr.ca.gov/docs/legbills/calcode/subchpte.htm>
4. California Department of Pesticide Regulation - <http://www.cdpr.ca.gov/index.htm>
5. California Department of Pesticide Regulation Laws and Regulations - <http://www.cdpr.ca.gov/docs/legbills/opramenu.htm>
6. DoD Instruction 4150.07: DoD Pest Management Program - [http://www.afpmb.org/pubs/dir\\_inst/dod4150.07-i.pdf](http://www.afpmb.org/pubs/dir_inst/dod4150.07-i.pdf) (Appendix C, CD)
7. DoD 4150.07-M, Volume 1: Plan for the Certification of Pesticide Applicators - [http://www.afpmb.org/pubs/dir\\_inst/dod4150.07-p.pdf](http://www.afpmb.org/pubs/dir_inst/dod4150.07-p.pdf) (CD)
8. EPA, Pesticides, Read the Label First - <http://www.epa.gov/pesticides/label/>
9. Naval Base Ventura County website - <http://www.cnvc.navy.mil/Ventura/index.htm>
10. OPNAVINST 5090.1C, Chapter 17: Environmental Readiness Program Manual, Pesticide Compliance Ashore - (Appendix C, CD)
11. Ventura County Agricultural Commissioner - <http://portal.countyofventura.org/portal/page/portal/AgCommissioner>
12. NB Ventura County Environmental Policy (on CD)
13. NAVMED P-5010: Manual of Naval Preventive Medicine - [http://www-nehc.med.navy.mil/prevmed/eh/EH-Manual\\_Prevmed.htm](http://www-nehc.med.navy.mil/prevmed/eh/EH-Manual_Prevmed.htm)
14. OPNAVINST 6250.4B: Pest Management Program - <http://doni.daps.dla.mil/Directives/06000%20Medical%20and%20Dental%20Services/06-200%20Preventive%20Medicine%20Services/6250.4B.pdf> (Appendix C, CD)
15. U.S. Code of Federal Regulations (CFR) at 40 CFR Section E, 150-80 - [http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?sid=401d1fa5a85e820674e669b8a3edf23b&c=ecfr&tpl=/ecfrbrowse/Title40/40cfrv23\\_02.tpl](http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?sid=401d1fa5a85e820674e669b8a3edf23b&c=ecfr&tpl=/ecfrbrowse/Title40/40cfrv23_02.tpl)
16. U.S. Environmental Protection Agency Pesticide Program - <http://www.epa.gov/pesticides/>

**Table 1-3: PEST MANAGEMENT PROGRAM ADMINISTRATION REQUIREMENTS**

<b>Requirement</b>	<b>Description</b>	<b>Reference</b>	<b>Responsibility</b>	<b>Locator</b>
<b>PLANNING</b>	Prepare, review and revise the Pest Management Plan annually.	OPNAVINST 6250.4B; OPNAVINST 5090.1C	Integrated Pest Management Coordinator (IPMC)	Section 1.2
<b>CERTIFICATION</b>	Ensure that all personnel applying pesticides on installations have current DoD pesticide applicator certification or Environmental Protection Agency (EPA)-approved State applicator license	OPNAVINST 6250.4B; OPNAVINST 5090.1C	All pesticide applicators	Section 2.4
<b>PESTICIDE APPROVAL</b>	Compile and submit list of new pesticides to be used on the installation to NAVFAC Southwest for approval.	OPNAVINST 6250.4B; OPNAVINST 5090.1C	IPMC	Section 2.5
<b>RECORD KEEPING</b>	Record all pest management operations conducted at the installation after each operation.	OPNAVINST 6250.4B; OPNAVINST 5090.1C	IPMC in coordination with pesticide applicators and PCPAR	Section 2.6.1
<b>MAINTAIN RECORDS</b>	Maintain records of all pest management operations conducted at the installation on-site indefinitely.	OPNAVINST 6250.4B; OPNAVINST 5090.1C	IPMC	Section 2.6.3
<b>REPORTING</b>	Compile and report all pest management operations to NAVFAC Southwest quarterly.	OPNAVINST 6250.4B; OPNAVINST 5090.1C	IPMC	Section 2.6.2
<b>COMPLIANCE</b>	Ensure that pest management is conducted in compliance with county, state, federal and Department of Navy and Defense regulations.	OPNAVINST 6250.4B; OPNAVINST 5090.1C	IPMC	Section 1.4
<b>CONTRACT REVIEW</b>	Review pest management contract specifications for compliance with the Pest Management Plan and submit to NAVFAC Southwest for final review and approval prior to submitting for bidding.	OPNAVINST 6250.4B; OPNAVINST 5090.1C	IPMC	Section 2.7.2

USC: U.S. Code

CFR: Code of Federal Regulations

CCR: California Code of Regulations

**This page left intentionally blank.**

**Table 1-4: PEST MANAGEMENT PROGRAM OPERATIONS REQUIREMENTS**

<b>Requirement</b>	<b>Description</b>	<b>Reference</b>	<b>Responsibility</b>	<b>Locator</b>
<b>INTEGRATED PEST MANAGEMENT (IPM)</b>	Federal agencies shall use IPM techniques in carrying out pest management activities and shall promote IPM through procurement and regulatory policies, and other activities.	USC Title 7, Chapter 6, Subchapter II, Sec. 136r-1	IPMC	Section 3.1
<b>CONTAINERS</b>	All pesticide containers, including service containers, must have the original or copy of the original label attached.	CCR 6676 and 6678	Pesticide applicators	Section 3.4.7.2
<b>PEST CONTROL VEHICLES</b>	Pesticides shall be properly stored on pest control vehicles. Pest control vehicles shall meet federal, state, and local regulatory requirements.	OPNAVINST 6250.4B; CCR 6682	Pesticide applicators	Section 3.4.8
<b>APPLICATION</b>	Applications of pesticides must be performed in accordance with the pesticide container label.	CA Food and Ag Code 12995; CCR 6600 and 6602	Pesticide applicators	Section 3.4.7
<b>APPLICATOR SAFETY</b>	DoD pesticide applicators must be enrolled in a medical surveillance program and be provided with properly fitted personal protective equipment	OPNAVINST 6250.4B; CCR Ch. 3, Subchapter 3	Pesticide applicator, safety officer	Section 4.1
<b>CLEANING AND DISPOSAL</b>	Rinsate from container and equipment rinsing should be prevented from entering storm drains and water bodies. Dispose of empty containers properly.	OPNAVINST 6250.4B; 40 CFR 165; CCR 6608	Pesticide applicators	Section 3.4.9 and 3.4.10
<b>SPILLS</b>	Spill kits should be maintained in pest control shops and on pest control vehicles. All personnel should be familiar with the installation's spill contingency plan.	OPNAVINST 6250.4B; OPNAVINST 5090.1C	Pest control shop supervisor and pesticide applicators	Section 5.3.1.3

USC: U.S. Code

CFR: Code of Federal Regulations

CCR: California Code of Regulations

**This page left intentionally blank.**

## 2 Administration

### 2.1 Organization

Figure 2-1 illustrates the organization of pest management activities at the NBVC.

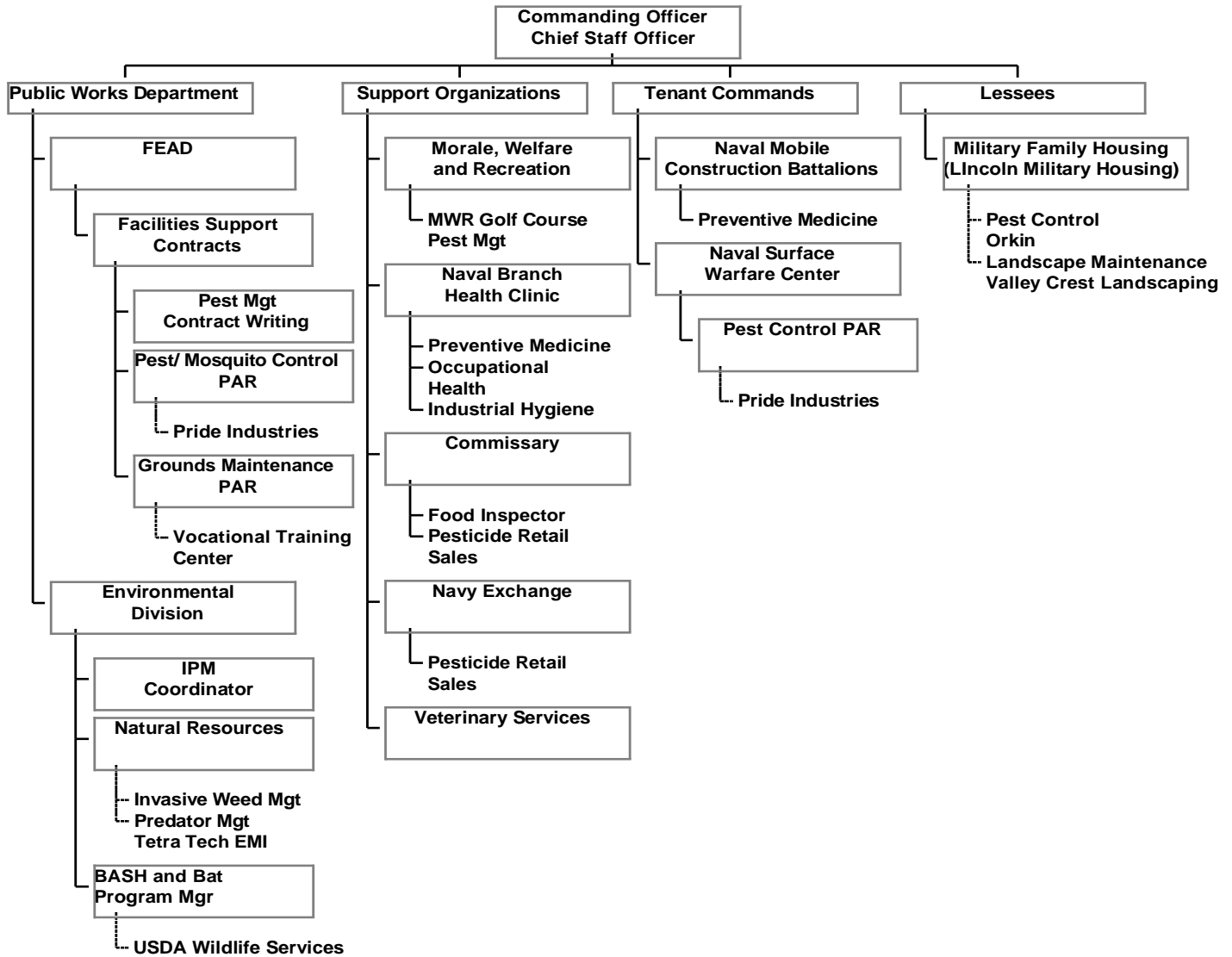


Figure 2-1: NBVC Pest Management Organization

## 2.2 Roles and Responsibilities

The success of the IPMP depends largely on a clear understanding of the roles and responsibilities for the organizations and personnel involved. The following is a listing of the key organizations and personnel and their duties as presented in DoD guidance documents for the implementation of the IPMP.

### 2.2.1 Commanding Officer (CO)

- Designate an Integrated Pest Management Coordinator in writing;
- Approve and support the IPMP; and
- Ensure appropriate funding of pest management programs to provide for effective and safe control of pests based on pest management priorities for NBVC.

### 2.2.2 Integrated Pest Management Coordinator (IPMC)

Designated by the CO in writing to coordinate all installation pest management activities.

- Review and approve the IPMP;
- Review and update IPMP annually;
- Coordinate with and ensure that all pest management service providers (PMSP) have access to, are aware of the requirements of, and comply with the IPMP;
- Ensure that PMSPs are aware of and conduct operations in accordance with the CO's safety and environmental policies;
- Ensure all pesticide applicators conducting operations on the installation and Pest Control Performance Assessment Representatives (PCPARs) have current pest management training and certification;
- Ensure that all PMSPs are using only pesticides listed on the installation authorized use list;
- Coordinate reporting of pest management and pesticide use on the installation to the NAVFAC Southwest PPMC;
- Act as liaison between the NBVC and NAVFAC Southwest and Federal, State of California, and local agencies for pest management and pesticide regulatory issues; and
- Act as the CO's advisor for pest management issues.
- Provide oversight and administrative support to the NBVC San Nicolas Island pest management program and coordinate review of the PPMP.

### 2.2.3 Public Work Department, Environmental Division

Ensures environmental compliance of the pest management program.

- Review and approve new pesticides and pest management operations that may adversely impact the environment;
- Conduct internal compliance assessments of the pesticide and pest management program; and
- Provide technical review of the IPMP.

### 2.2.4 Public Works Department, Facilities Engineering and Acquisition Division (FEAD)

Prepares, manages and assesses pest control and grounds maintenance contracts.

- Prepare contracts ensuring that all requirements of the IPMP are included in the contract specifications;
- Coordinate pest management contract specification review prior to bidding with the IPMC and then submit to the NAVFAC Southwest PPMC for review and final approval;
- Monitor pest management contractors ensuring effective and safe application of pest management practices and identify and document discrepancies and seek corrective action with contractor in accordance with the contract; and
- Ensure that the contractors record all pest management activities and submits reports including actual pesticide use to the IPMC on a monthly basis.

### 2.2.5 Naval Branch Health Clinic, Occupational & Environmental Health Dept, Preventive Medicine Div

- Provides public health support to NBVC in accordance with NAVMED P-5010.



- Act as advisor and liaison to CO for public health pest prevention and management;
- Conduct surveys for pests of medical importance, such as cockroaches, mosquitoes, bedbugs, etc., through habitability and food service sanitation inspections;
- Establish and maintain liaison with local health agencies as they pertain to vector management and vector-borne and zoonotic disease prevention;
- Maintain current certification as DoD Category 8 (public health) pesticide applicator;
- Consult and liaise with Navy Environmental and Preventive Medicine Unit FIVE, San Diego (NEPMU-5) in the event of vector-borne outbreak or disaster. NEPMU-5 will develop and maintain an emergency plan for vector and pest control for NBVC during a vector-borne disease outbreak or disaster.
- Provide technical review of the IPMP.

#### 2.2.6 U.S. Army Veterinary Services

The Veterinary Service operates a clinic on the Base with their primary mission being care of military working dogs. Their secondary mission is the care of resident pets, which includes micro-chipping of pets for tracking purposes. Responsibilities include:

- Ensure protection of food from pests at the Commissary;
- Report pest infestations that require professional pest management services; and
- Conduct surveillance for pests which damage, destroy, and contaminate food stored in the Commissary and installation facilities;

#### 2.2.7 Contract Pest Management Service Providers (PMSP)

Commercial contractors provide pest control and grounds maintenance services to the NBVC and to non-appropriated fund (NAF) activities. These responsibilities also apply to all other contractors on the installation.

- Conduct pest management operations in accordance with the contract specifications or lease agreements, the IPMP and in compliance with Federal and State of California laws and regulations;
- Submit a list of pesticides proposed for use on the installation to their Government representative;
- Communicate all pest management issues and requirements via the Government representative; and
- Submit daily management operation records to the Government representative.

#### 2.2.8 Moral Welfare and Recreation

Operates golf course and other recreational facilities.

- Ensure that the golf course pesticide applicator(s) receives pest management training and maintains DoD or State pesticide applicator licensing.
- Conduct turf and landscape pest management at golf courses;
- Ensure that all pesticides to be used at golf courses and other facilities are submitted to the IPMC and to NAVFAC Southwest PPMC for approval prior to use;
- Record and report all pest management operations conducted at MWR facilities to the IPMC and to NAVFAC Southwest; and
- Submit any contract specifications for pest management to the IPMC and to NAVFAC Southwest PPMC for technical review prior to submitting the contract for bid.

#### 2.2.9 Navy Exchange Manager

Operates retail store, mini-marts, gas station, Navy Lodge, commercial food vendors, and other services. Oversees retail sales of pesticides and landscape products.

- Display pesticides in accordance with the pesticide label and other Federal, State and local regulations; and
- Do not procure and sell non-native, invasive plants.

#### 2.2.10 Commissary

- Ensure that pesticides for retail sale are safely displayed on shelves;

- Ensure delivered food products are free from pest infestation;
- Ensure proper sanitation and hygiene to prevent pest problems; and
- Control pests that occur in the Commissary.

#### 2.2.11 DoD and Private Housing Managers

Provides pest control and landscape maintenance for military family housing residents.

- Ensure pesticide application records are reported;
- Ensure that only current State licensed businesses and pesticide applicators apply pesticides; and
- Submit any changes to the Partner Pest Management Plan, including applicators and pesticides, to the IPMC.

#### 2.2.12 Self-help Pest Control Program Participants

Self-help weed control is authorized for the Natural Resources program.

- Receive training from the program leader;
- Use only pesticides listed on the approved self-help pesticide list;
- Store pesticides in accordance with label directions; and
- Report pesticide use to the program leader.

#### 2.2.13 Building Occupants and Barracks / Housing Residents

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

### **2.3 Staffing and Facilities**

#### 2.3.1 Public Works Department

##### 2.3.1.1 *Environmental Division*

The Environmental Division (ED) is located in Bldg. PM-632 at NBVC Point Mugu and oversees all environmental compliance, planning, and remediation programs on the installation. They are responsible for the pesticide compliance program in accordance with OPNAVINST 5090.1C, Chapter 17. The Natural Resources Manager is the Integrated Pest Management Coordinator. He is a DoD-certified pesticide applicator. One ED administrative staff is assigned to collect, maintain and report pest management operations for the installation.

##### 2.3.1.2 *Facilities Engineering and Acquisition Division*

The FEAD is located in Bldg. PM- 66 on NBVC Point Mugu and has staffing to prepare and monitor the pest/mosquito control and grounds maintenance contracts. One DoD accredited PCPAR is assigned to assess both contracts.

#### 2.3.2 MWR Golf Course

The golf course is located on the northern border of NBVC Port Hueneme and a driving range is located on NBVC Point Mugu. One DoD certified golf course superintendent maintains both courses. The maintenance office is located in Bldg. PH-1160 and pesticides are stored in Bldg. PH-1510. Both facilities are on NBVC Port Hueneme.

#### 2.3.3 Military Family Housing

MFH is found on both installations and include the communities of Anacapa, Bard Estates, Bruns Park, Coral Sea Cove, San Miguel, Santa Cruz and Santa Rosa. Lincoln Military Housing manages most of the residential areas and has District Offices at 1130A 34<sup>th</sup> Ave. on NBVC Port Hueneme and 1135 Sparrow Dr. on NBVC Point Mugu. The regional maintenance director ensures pest control and landscape maintenance services for the housing residents and common grounds. Lincoln contracts with Orkin Pest Management for pest control and Valley Crest for

landscaping. Housing that is still under DoD management are the 801 Lease on NBVC Port Hueneme and some individual houses in the Santa Cruz community on NBVC Point Mugu. These are serviced by the facilities support contract.

#### 2.3.4 Naval Branch Health Clinic

The NBHC is a tenant command of NBVC and a branch clinic of Naval Hospital Camp Pendleton (NHCP). Personnel in the Preventive Medicine Division have the overall responsibility for ensuring prevention of vector-borne diseases and other health threats due to animals on the installation. The preventive medicine staff is comprised of 6 Preventive Medicine Technicians (PMTs). An Environmental Health Officer (EHO) at NHCP provides reach-back support.

##### 2.3.4.1 *Occupational and Environmental Health Department*

This department consists of the following three divisions: Industrial Hygiene, Occupational Medicine and Preventive Medicine. Six Preventive Medicine Technician (PMT) billets in the Preventive Medicine Division provide environmental health support including conducting food service and habitability inspections of installation facilities and assist with disease prevention programs. Additionally, this division has the overall responsibility for ensuring prevention of vector-borne diseases and other health threats due to animals on the installation. PMTs are active duty hospital corpsmen that are DoD-certified pesticide applicators in Category 8, Public Health. NBHC can request additional entomology and vector surveillance and control support from active duty entomologists at Navy Environmental and Preventive Medicine Unit FIVE (NEPMU-5) at Naval Station San Diego.

##### 2.3.4.2 *Industrial Hygiene and Occupational Medicine*

Industrial Hygiene (Bldg 1180) provides workplace monitoring and industrial hygiene surveys of the pest control shop to ensure a safe working environment. Occupational medicine support, including physical exams, respirator qualification exams, and medical surveillance for DoD pesticide applicators is provided by the staff of NHL. Occupational Medicine is located in NBVC Port Hueneme (Bldg. PH-1402).

#### 2.3.5 Veterinary Services

The U.S. Army Branch Veterinary Services is located in Bldg. PH-528 and is staffed by a civilian veterinarian. Clinical services include treatment of military working dogs and pets for fleas and other parasites. Army Veterinary Technicians provides food quality inspection services, including pest inspections, in the Commissary in Bldg. PH-1512.

## 2.4 **Training, Certification and Licensing**

### 2.4.1 General Requirements

IPM requires personnel who are properly trained to investigate and diagnose pest problems, select the appropriate pest management method, apply the appropriate pesticide, perform these operations so that they are safe to humans and the environment, and educate and advise their customers on pest prevention methods. All installation pest management personnel who apply or supervise the application of pesticides shall be trained and certified within two years of employment in accordance with the DoD Plan for the Certification of Pesticide Applicators of Restricted Use Pesticides or an EPA-approved State certification plan (OPNAVINST 6250.4B, Encl (1), pg 4-5). Additionally, professional pest management personnel shall be certified if their duties include (OPNAVINST 6250.4B, Encl (1), pg.4-6):

- Making recommendations for the use of pesticides, applying pesticides, or directly supervising the application of pesticides.
- Conducting demonstrations on the proper use and techniques of pesticide application or the supervision of pesticides.
- Conducting field research that includes using or supervising the use of pesticides.

### 2.4.2 Requirements for DoD pesticide applicators

DoD applicators may be certified in the following categories:

- Cat. 3. Ornamental and Turf (landscape arthropod and vertebrate pests)
- Cat. 5. Aquatic (aquatic weeds in lakes, ponds, rivers, streams, irrigation canals)
- Cat. 6. Right-of-Way (weeds on sidewalks, along fence lines, parking lots, road ways, storage tank grounds)
- Cat. 7. Industrial, Institutional, Structural, and Health-Related (termites and other wood-destroying insects; cockroaches; crickets and other invading organisms; fumigation of rodent burrows and commodities)
- Cat. 8. Public Health (mosquitoes, ticks, fleas, rodents)
- Cat. 11. Aerial Application (application of pesticides for any pest by fixed or rotary-wing aircraft)

Currently, there are five DoD pesticide applicators at NBVC: the BHC Preventive Medicine Technicians (PMTs). PMTs are required to be certified only in Category 8 and receive their certification during Hospital Corpsmen C School, PMT School. Initial certification in Categories 3, 5, 6, 7, and 8 for civilian employees is a three week course conducted by an EPA-designated DoD training center. Currently, the Navy course is conducted by the Navy Entomology Center of Excellence (NECE) in Jacksonville, Florida and Navy Environmental and Preventive Medicine Unit FIVE (NEPMU-5) in San Diego, California. Initial certification and recertification in Category 11 is a one week course conducted by the Air Force Reserve in Vienna, Ohio. Certification for all categories is valid for three years. With proper justification, certifications can be extended for an additional six months by the applicator's certifying authority; twelve months for PMTs. Recertification courses for civilians in all categories except Category 11 are conducted annually by NAVFAC. PMTs may recertify in Category 8 at NEPMU-5 or NECE. Initial and recertification course schedules can be viewed at <http://www.afpmb.org/pubs/courses/courses.htm>.

#### 2.4.3 Requirements for commercial contract applicators

"Contractor employees performing pest management on the installation shall be certified prior to the beginning of the contract under the State plan. The contractor shall provide evidence of training and experience in the specific pest control category(s) for services that they provide" (OPNAVINST 6250.4B, Encl. (1), pg.4-5).

##### 2.4.3.1 *Grounds maintenance*

This applies to all personnel performing weed control and ornamental pest control. Per California regulations, commercial applicators may apply pesticides if:

- They hold a "Qualified Applicator Certificate" (QAC) issued by the California Department of Pesticide Regulation (DPR);
- They hold a "Qualified Applicator License" (QAL) issued by DPR; or

Applicators with QAC or QAL must be licensed in Category B, landscape maintenance, and/or Category C, right of way and may apply restricted use pesticides (RUP). Certifications and licenses must be renewed every two years through a continuing education program. For more information on pesticide applicator licensing in California go to <http://www.cdpr.ca.gov/docs/license/liccert.htm>.

##### 2.4.3.2 *Structural Pest Control*

This applies to the housing and BOSC pest control contractors. Applicators applying pesticides inside and outside buildings to control household or structural pests must have a license as an "Operator" (OPR) or "Field Representative" (FR) from the California Structural Pest Control Board (SPCB). Contractor employees may also be licensed as a "Registered Applicator" (RA), but must work under the supervision of an OPR or FR. Applicators must be licensed in Branch 2: General pests. If they will be controlling wood-destroying pests, excluding fumigation, then they must be licensed in Branch 3. Persons supervising fumigations must be licensed in Branch 1: Fumigation. For more information go to <http://www.pestboard.ca.gov/>.

##### 2.4.3.3 *Mosquito and Vector Control*

Personnel employed by a mosquito abatement district or other public health agency are trained and certified as applicators by the California Department of Public Health (CDPH). Certification categories are: A, Pesticide Use and Safety; B, Mosquito Biology and Control; C, Invertebrates of

Public Health Significance Biology and Control; and D, Vertebrates of Public Health Significance Biology and Control. Employees of commercial pest control companies that perform mosquito and vector control must be licensed by CDPR in Category K, Health Related. For more on technician certification go to <http://www.cdph.ca.gov/certlic/occupations/Pages/VectorControlTechnicianProgram.aspx>.

#### 2.4.4 Requirements for Natural Resource Management Applicators

Commercial applicators applying herbicides for invasive weed control or habitat restoration must hold a QAC or QAL in category B, Landscape Maintenance. Wildlife managers that use pesticides for control must hold a QAC or QAL in category D (Plant Agriculture) and/or I (Animal Agriculture).

#### 2.4.5 Requirements for Performance Assessment Representatives

Pest Control Performance Assessment Representatives (PCPAR) assess the performance of contractors in the Performance Based Acquisition (Contracting) Program. NBVC is required to train personnel who provide performance assessment for commercial pest control services as PARs and send them to refresher training every three years (OPNAVINST 6250.4B, Encl. (1), pg.4-8 and OPNAVINST 5090.1B, Para 13-52, page 13-6). NAVFAC provides initial and refresher PCPAR training annually. Go to <http://www.afpmb.org/pubs/courses/courses.htm#pestmgmtquaassurance> for initial training schedules. PCPARs may attend the DoD pesticide applicator recertification course for refresher training. Go to <http://www.afpmb.org/pubs/courses/courses.htm#pestapprecert> for refresher training schedules.

#### 2.4.6 Requirements for Integrated Pest Management Coordinator and Environmental Personnel

“The IPMC shall have the educational background, technical knowledge, and management skills to implement and oversee the pest management program.” (DoDI 4150.07, Para. E4.4.1) New IPMCs are required to receive training on the administrative and operational requirements of installation pest management. Environmental personnel who have compliance oversight of pesticides on the installation should also receive training. The initial PCPAR and IPMC course provides the necessary training. NAVFAC Southwest conducts this course annually. Go to <http://www.afpmb.org/pubs/courses/courses.htm#pestmgmtquaassurance> for training schedules. If the IPMC will be applying pesticides or recommending pesticide applications, then they must be certified as a DoD pesticide applicator.

#### 2.4.7 Verification of Qualifications

Copies of certifications or licenses shall be obtained from all PMSP personnel applying pesticides on NBVC. Certification status shall be verified annually and can be done through the following sources:

- DPR applicator certification / license: <http://www.cdpr.ca.gov/docs/license/currlic.htm>.
- SPCB applicator license / business license: <http://www.pestboard.ca.gov/index.shtml>.
- CDPH Vector Control Technician Certification:  
<http://www.cdph.ca.gov/certlic/occupations/Pages/VectorControlTechnicianProgram.aspx>
- DoD applicator license / IPMC and PCPAR accreditation: Contact the NAVFAC Southwest PPMC at (619) 532-1157 or [michael.j.medina1@navy.mil](mailto:michael.j.medina1@navy.mil).

A list of applicators and their certification / license numbers as well as a list of business licenses is found in Appendix K.

#### 2.4.8 Continuing Education

Although recertification is required every three years, there are no continuing education requirements to maintain the DoD pesticide applicator certification. However, pesticide applicators, IPMCs, and PCPARs should take advantage of the many educational opportunities that are provided to civilian pesticide applicators. Information on continuing education and a list of approved courses, classes, and symposiums are found in <http://www.cdpr.ca.gov/docs/license/conted.htm>. Additional educational and training resources are available in Appendix L.

**Table 2-1: The NBVC Pest Management Licensing and Recertification Training Requirements**

<b>Position</b>	<b>Initial training</b>	<b>Recertification or refresher training</b>
IPMC	Attend DoD Pest Control Quality Assurance Evaluator (PCQAE) / Performance Assessment Representative (PAR) / Installation Pest Management Coordinator Course (IPMC)	Attend Navy Pesticide Applicator Recertification Course / PCQAE Refresher Course (every 3 years)
PCPAR	Attend DoD Pest Control Quality Assurance Evaluator (PCQAE) / Performance Assessment Representative (PAR) / Installation Pest Management Coordinator Course (IPMC)	Attend Navy Pesticide Applicator Recertification Course / PCQAE Refresher Course (every 3 years)
PMT	Initial DoD Pesticide Applicator Certification Course (Core and EPA Category 8)	Attend Navy Pesticide Applicator Recertification Category 8 Course (every 3 years)
MWR Golf Course Applicator	Initial DoD Pesticide Applicator Certification Course (Core and EPA Categories 3, 5, 6, 7 and 8)	Attend Navy Pesticide Applicator Recertification Categories 3, 5, 6, 7 and 8 Course (every 3 years)
Contract Pest Control PCOs	SPCB licensed as Operator, Field Representative, or Registered Applicator in the appropriate Branches.	License renewal every 3 years. Renewed by acquiring continuing education hours (number of hours dependent on number of Branches for which qualified) during the renewal period.
Contract Grounds Maintenance PCOs	QAL or QAC from DPR; take exams in appropriate categories for initial licensing	License or certificate renewed every 2 years. Renewed by acquiring 20 continuing education hours within the 2 year renewal period.

**2.5 Pesticide Approval**

DoD and DoN directives require installations to submit a list of pesticides that will be used on NBVC property to the NAVFAC Southwest PPMC for review and approval (OPNAVINST 6250.4B, Encl 2, pg 6). The purpose of this approval process is to ensure that only registered pesticides which are safe, effective and appropriate for the application site and target pest will be used on the installation. Requests for pesticide approval will be submitted to the PPMC via the installation IPMC using the Navy Online Pesticide Reporting System (NOPRS) (see section 2.6.2.). The pesticide authorized use list for NBVC is in Appendix E. Once a pesticide is approved, it may be used onsite as per the label directions. New pesticides can be added using NOPRS.

**2.6 Records and Reporting**

“All shore installations and units performing pest control operations shall maintain daily records of pesticide applications and submit reports of pest management operations for management by the cognizant installation IPMC.” (OPNAVINST 6250.4B, Encl.2, p.10 and OPNAVINST 5090.1C, Para. 17-4.2)

**2.6.1 Pest management record keeping**

All PMSPs shall record pest management operations daily. Records shall include all pest management operations including pesticide applications, surveys and non-chemical control

operations performed on the installation by commercial contractors as well as work performed by DoD pest management personnel. The records will include the following information: date of application, location and site, type of operation, target pest, amount of area treated, name of applicator, pesticide information (trade name, active ingredient, and formulation), amount of pesticide applied, final concentration, and calculated pounds of active ingredient applied. The following operations are excluded from the recordkeeping requirement:

- Personal use of insect repellent.
- Application of repellent by deployable units during mass treatment of clothing and tentage.
- Application of pesticides for personal relief by residents of military housing.
- Application of pesticides for flea and tick control to pets by pet owners and veterinary services.

PMSPs may create and maintain records in a format that they choose, however, the records shall be submitted to the IPMC by the NOPRS (section 2.6.2.)

## 2.6.2 PMSP Reporting Procedures

All PMSPs shall use the Navy Online Pesticide Record System (NOPRS) (<https://clients.emainc.com/dcs/pestmanagement/pesticidelogon.asp>) to report pest management operations. This system is also used to maintain the installation pesticide authorized use list and will, in the future, be used to manage applicator licensing and IPMP maintenance. NOPRS eliminates the need to e-mail electronic records to the PPMC. The records are entered directly into a central database that can be accessed by the PPMC and the IPMC and downloaded onto a spreadsheet. The only computer requirement is a reliable internet connection. Contact the NAVFAC Southwest PPMC to establish log in accounts.

## 2.6.3 Maintaining pest management operations records

NBVC must archive on site indefinitely, complete daily pest management operation records (OPNAVINST 5090.1C, Para. 17-4.2a.). Pesticide applications for each building, structure, or outdoor site must be accounted for. Past hardcopy records must be archived to prevent them from being destroyed. Electronic records shall be stored to prevent destruction or loss; back-up copies are recommended. All records reported on NOPRS will be stored on external servers maintained by NAVFAC and may be used as a back-up. Downloading of records from NOPRS and maintaining them on-site is highly recommended.

## 2.7 **Government Contracts**

### 2.7.1 Current Pest Management Contracts

Facilities service contracts at NBVC are awarded under the NISH program. Pride Industries provides pest control (Contract No. N62473-09-D-5203) and Vocational Training Center (VTC) is the grounds maintenance contractor (Contract No. N62473-07-D-1537). Contracts are prepared and managed by the Facilities Engineering and Acquisition Division (FEAD), Facility Service Contracts (FSC) Branch. The Environmental Division (ED), Natural Resources Management Program uses a NAVFAC SW regional contract with Agri Chemical Supply (No. N62473-10-D-0802) to control invasive plants.

### 2.7.2 Contract Specifications and Review

Pest management contract specifications must be written to ensure effectiveness, safety, and regulatory compliance. Specifications should state that the contractor:

- Shall comply with Federal, State, and local laws and regulations which also includes DoD, DoN and USMC directives and this IPMP;
- Shall provide copies of pesticide applicator and business licenses to verify that they are current;
- Shall request approval of all pesticides to be used on the installation prior to their use;
- Shall use pest control vehicles that are properly marked and provide secure storage for pesticides;
- Shall report pesticide use and all pest management activities to the installation IPMC via the Government Representative; and

- Shall not store, mix, or dispose of pesticides or clean pest control equipment on the installation.

Facilities Support Contract / Base Operation Support (FSC/BOS) performance-based contract templates for pest control (Sub-annex 1503020) and grounds maintenance (Sub-annex 1503050) are available from NAVFAC Southwest. The NBVC facilities contracting officer (KO) or contracting officer representative (COR) can provide additional information. Additional guidance on writing contracts can be found in AFPMB TG 39: *Guidelines for Preparing DoD Pest Control Contracts using Integrated Pest Management*. The online version also contains links to the DoD Guide Performance Work Statement. The KO shall send the contract specifications to the NAVFAC Southwest PPMC for review prior to sending the contract out for bidding (OPNAVINST 6250.4B, Encl 1, p. 4-8).

### 2.7.3 Government Representatives

Contractors will communicate and submit required pest management reports via their Government representative. For the BOS, the representative is the PCPAR who is responsible for assessing the contract. For NAFI (i.e. NEX, MWR) contracts the representative is the local NAFI organization manager. In cases where a Government representative is not available, then the installation IPMC may liaison with a contractor's representative.

### 2.7.4 Contract Requirements

The application of pesticides by contractors is strictly regulated by Departments of Defense and Navy regulations, this IPMP and California regulations. These requirements apply to all pesticide applications including insecticides, herbicides, fungicides, molluscides, etc. to turf, ornamentals, trees, and all indoor work. These requirements apply to any size contract (small purchase or facility support contract generated) and services acquired by any other means including government purchase cards (EBUSOFFINST 4200.1, Para.7). The specific requirements for contracted pest control operators working on Navy properties are:

- Contractor Work Plan (CWP): If required by the contract, a CWP shall be submitted as part of the contractor's proposal. The CWP specifies how the contractor will meet the contract requirements. The CWP will be included in this IPMP in Appendix H.
- Pesticide Applicator Certification: All contractor personnel, who apply pesticides (which include all herbicides), shall be certified / licensed in the appropriate applicator category in accordance with section 2.4.4 of this Plan. All contractors who will apply pesticides shall, prior to the start of work, supply a copy of the certificate(s) / license(s) in accordance with contract specifications. A list of applicators and their license or certificate numbers is included in Appendix K of this Plan.
- Pesticide Approval: Pesticides used by contractors must be approved, before use, by the NAVFAC Southwest PPMC as described in section 2.5. The list of proposed pesticides shall be included in the CWP or submitted to the designated Government representative using the format designated in the contract specifications. The list is in Appendix E of this Plan.
- Pesticide Mixing, Storage, and Disposal: The grounds maintenance contractor is permitted to store and mix pesticides on the Station. They are required to dispose of excess pesticide and empty containers off Navy property and will assume generator status.
- Pesticide Applications: Only approved pesticides shall be used and applied in a manner consistent with the pesticide label.
- Pest Management Reporting: Contractors shall submit reports in accordance with the reporting requirements in section 2.6.2.
- Contractor Vehicles:
  - Safety equipment: Vehicles used to transport pesticides shall be equipped with a fire extinguisher and a spill and decontamination kit, capable of handling the maximum amount of pesticide transported at any given time.
  - Security: All pesticides carried on the vehicles shall be secured in locked compartments at all times. Vehicles shall not be left unattended at any time unless properly locked and secured.
  - Identification: Vehicles will be clearly identified as a pest control vehicle.
  - Appearance: All vehicles shall be maintained with a clean and orderly appearance, free from observable pesticide spills, residues, or build-up.



- Transporting pesticides: Pesticides shall not be transported in the cab or occupied part of any vehicle. They shall always be carried in a separate compartment from the occupied cab.
- **Compliance Assessment:** All contractors are subject to regulatory compliance assessments by the PCPAR, IPMC, environmental compliance staff, and other authorized Government personnel. Pest control vehicles, pesticide applications, and administrative requirements are subject to inspection.

2.7.5 Common Performance Levels

Commander Naval Installations Command (CNIC) uses Common Performance Levels (CPL) to describe the delivery of shore installation support services including pest control and grounds maintenance. NRSW sets the CPL levels the installation Facility Support Contract services in order to manage costs. The higher the CPL the lower the level of service provided. Lower CPLs can lead to increased risk of pests and increased use of pesticides due to the lack of surveillance for some operations. Table 2-2 describes the pest management services provided at each CPL.

<b>Table 2-2: Common Performance Levels (CPL) for Pest Control Services</b>	
(CPLs)	Pest Control CPL Definitions
CPL1	<b>All Pest Control</b> - is conducted in accordance with the Installation Integrated Pest Management Plan (IPMP).
CPL2	<p><b>Mission Impact Pests</b> - Surveillance and treatment is conducted in accordance with the Installation IPMP.</p> <p><b>Structure Damaging and Disease Vector or Health Pests</b> - Surveillance and treatment is conducted in accordance with the Installation IPMP.</p> <p><b>Lawn Turf and Ornamental Plant Pests</b> - Surveillance and treatment conducted in accordance with the Installation Integrated IPMP in prestige areas only. Treatment of lawn turf and ornamental plant pests in improved grounds areas is conducted in response to customer complaints only.</p> <p><b>Nuisance Pests</b> - Surveillance and treatment conducted in accordance with the Installation IPMP is limited to administrative and high sanitation areas. No surveillance in operational areas. Treatment of operational areas is conducted in response to customer complaints only.</p>
CPL3	<p><b>Mission Impact Pests</b> - Surveillance and treatment is conducted in accordance with the IPMP.</p> <p><b>Structure Damaging and Disease Vector or Health Pests</b> - Surveillance and treatment is conducted in accordance with the Installation IPMP.</p> <p><b>Lawn Turf and Ornamental Plant Pests</b> – No surveillance in any grounds areas and treatment in prestige areas is conducted in response to customer complaints only. No treatment in improved grounds areas.</p> <p><b>Nuisance Pests</b> - Surveillance and treatment conducted in accordance with the Installation IPMP is limited to administrative and high sanitation areas. No surveillance in operational areas. Treatment of operational areas is conducted in response to customer complaints only.</p>
CPL4	<p><b>Mission Impact Pests</b> - Surveillance and treatment is conducted in accordance with the Installation IPMP.</p> <p><b>Structure Damaging and Disease Vector or Health Pests</b> - Surveillance and treatment is conducted in accordance with the Installation IPMP.</p> <p><b>Lawn Turf and Ornamental Plant Pests</b> – No surveillance or treatment of in prestige or improved grounds areas.</p>

<b>Table 2-2: Common Performance Levels (CPL) for Pest Control Services</b>	
(CPLs)	Pest Control CPL Definitions
	<b>Nuisance Pests</b> - Surveillance and treatment conducted in accordance with the Installation IPMP is limited to high sanitation areas only. No surveillance in operational or administrative areas. Treatment of operational and administrative areas is conducted in response to customer complaints only.

2.7.6 Contract Performance Assessment

Contracts shall be assessed by a trained PCPAR to ensure environmental and contractual compliance. For FSC/BOS contracts, Functional Assessment Plans (FAP) for pest control and grounds maintenance should be developed and implemented. FAP templates are available from the KO or NAVFAC Southwest. Assessments for pests prior to, during, and after pest control operations should be conducted to ensure efficacy of the services. Pest survey methods for contract performance assessments are found in Appendix H on each of the pest management project sheets. Inspection of the contractors during pesticide application should also be conducted to ensure safety measures are being taken. The contractors' vehicles and equipment must be made available for inspection when requested. In the absence of a PCPAR, the installation PMT can provide information on the efficacy of pest control in some facilities. The PMT conducts monthly inspections that include pest surveys of food service facilities and child development centers. The PCPAR and the IPMC should liaison and coordinate performance assessment activities with the PMT.

**2.8 Private Housing Contracts**

2.8.1 Pest Management Service Providers

Most of the military family housing (MFH) on NBVC is managed by Lincoln Military Housing who provides maintenance and community services for residents. Residential and landscape pest control is contracted to Orkin Pest Control Services. Residents are responsible for maintaining the backyard of the house. The landscape maintenance contractor, Valley Crest Landscaping, may use chemical and non-chemical methods for weed control. Any landscape pesticide use would be referred to the pest control contractors.

2.8.2 Requirements for Housing Contracts

The requirements in this section apply only to housing located on DoD/DoN-owned land. Pest management operations on housing located on privately owned land shall comply with the property management agreement guidelines and State and local regulations. DoD does not provide PCPARs for housing contracts; the management company is responsible for the performance of the contractors. Under the lease agreement, the private housing manager manages all aspects of the housing area, however, some DoN oversight is necessary to ensure that military personnel and their dependents and the environment are protected from disease vectors and harm due to misuse of pesticides. Therefore, all housing pest management contractors that perform work on DoD/DoN-owned land must comply with the regulatory requirements of the lease. All requirements shall be coordinated through the housing manager. The following requirements apply:

- Partner Pest Management Plan: The partner PMP shall be included in the housing management plan. It specifies how the housing manager's pest control contractors will perform pest control. If the landscape maintenance contractor applies pesticides, they must also prepare and submit a partner PMP. The partner PMP(s) shall be reviewed by the NAVFAC Southwest PPMC prior to establishment of the lease. A partner PMP template is available from the PPMC. The housing manager must ensure that the plan is updated as needed and remains current. Any updates to the plan shall be forwarded to the IPMC. A copy of the current pest control partner PMP is located in Appendix H.

- **Certified Pesticide Applicators:** All contractor personnel, who apply pesticides (which include all herbicides), shall be certified / licensed in the appropriate applicator category in accordance with section 2.4.4 of this Plan. A list of all applicators and their applicator certification / license numbers and categories shall be included in the partner PMP.
- **Pesticide Approval:** The NAVFAC PPMC shall review the pesticides listed in the partner PMP that are proposed for use in housing. The contractor shall update the pesticide list as needed.
- **Pesticide Mixing, Storage, and Disposal:** Contractors are prohibited from mixing or storing pesticides, storing pest control equipment, disposing of pesticide rinse water, leaving pesticide containers, or leaving any other pesticide articles on the NBVC property unless specifically permitted in the lease agreement. All pesticides shall be carried onto the property in ready-to-use form, previously mixed offsite. Excess pesticide and pesticide containers shall be transported and disposed of off the property and the contractor will assume generator status. Current information regarding these operations shall be included in the partner PMP.
- **Pesticide Applications:** Only pesticides listed in the partner PMP shall be used and applied in a manner consistent with the label directions.
- **Reporting Pest Control Applications:** In accordance with the partner PMP written reports, recommendations will be provided and reviewed with the housing manager following each service visit. Pest management operations including pesticide use shall be recorded and reported to the installation IPMC as described in section 2.6.
- **Contractor Vehicles:**
  - **Safety Equipment:** Vehicles used to transport pesticides shall be equipped with a fire extinguisher and a spill and decontamination kit, capable of handling the maximum amount of pesticide transported at any given time.
  - **Security:** All pesticides carried on the vehicles shall be secured in locked compartments at all times. Vehicles shall not be left unattended at any time unless properly locked and secured.
  - **Identification:** Vehicles will be clearly identified as a pest control vehicle.
  - **Appearance:** All vehicles shall be maintained in a clean and orderly appearance, free from observable pesticide spills, residues, or build-up.
  - **Transporting Pesticides:** Pesticides shall not be transported in the cab or occupied part of any vehicle. They shall always be carried in a separate compartment from the occupied cab.

### 2.8.3 Compliance Assessment

All contractors performing pest management on DoD/DoN-owned property are subject to regulatory compliance assessments by the IPMC, environmental compliance staff, and other authorized Government personnel. Pest control vehicles entering DoD property are subject to inspection.

### 2.8.4 Housing Mosquito Control

The installation mosquito control service does not include housing. The contract does provide control in mosquito breeding areas surrounding the housing areas and reduces mosquito populations that might affect the residents. The housing manager is responsible for protecting residents from mosquitoes that breed in the housing area and should provide mosquito prevention and emergency control to prevent disease transmission. This includes providing educational materials to prevent backyard mosquito breeding and providing maintenance to repair window and door screens.

## 2.9 **Self-help**

DoDI 4150.07 (Para.E4.7.7.3) allows self-help pest control programs on DoD installations when cost effective and when IPM monitoring indicates the need for control. Self-help pest control allows uncertified personnel to use low-toxicity, ready-to-use (RTU) pesticides for small scale pest control operations. On NBVC, the Natural Resources Program uses self-help to control small infestations of invasive plants. Requirements for self-help are:

- Program shall be reviewed and approved by the NAVFAC PPMC.
- A program leader who will be responsible for the program and the primary point of contact shall be designated.
- All personnel that will be applying pesticide must be trained and their training documented. Training must be provided by a DoD-certified pesticide applicator.
- Use only RTU pesticides approved for use by the NAVFAC PPMC as described in section 2.5.
- Store all pesticides in an ED approved storage site.
- Report all pesticide use in accordance with section 2.6.
- The area(s) to be treated should be small enough to be practically treated with RTU pesticides.
- The program shall be documented in the IPMP.

To request review of a proposed program, the requestor must complete and submit a Statement of Need (form is included in Appendix L). The program shall also be approved by the installation IPMC and the ED.

## 2.10 References

1. AFPMB TG 39: Guidelines for Preparing DoD Pest Control Contracts using Integrated Pest Management - <http://www.afpmb.org/pubs/tims/tim39.htm>
2. California Department of Pesticide Regulation (CDPR) Licensing and Certification Program - <http://www.cdpr.ca.gov/docs/license/liccert.htm>
3. California Department of Pesticide Regulation List of DPR Licensees - <http://www.cdpr.ca.gov/docs/license/currlic.htm>
4. California Department of Public Health Vector Control Technician Certification - <http://www.cdph.ca.gov/certlic/occupations/Pages/VectorControlTechnicianProgram.aspx>
5. California Structural Pest Control Board (SPCB) - <http://www.pestboard.ca.gov/>
6. Food and Drug Administration (FDA) 2005 Food Code - <http://www.fda.gov/Food/FoodSafety/RetailFoodProtection/FoodCode/FoodCode2005/default.htm>
7. SPCB Applicator License Look up - <http://www.pestboard.ca.gov/index.shtml>
8. SPCB: How do I renew my license? - <http://www.pestboard.ca.gov/howdoi/renew.shtml>
9. DoDI 4150.07-M: DoD Pest Management Training and Certification – [http://www.afpmb.org/pubs/dir\\_inst/dod4150.07-m.pdf](http://www.afpmb.org/pubs/dir_inst/dod4150.07-m.pdf) (CD)
10. DoDM 4150.07, Volume 1: DoD Pest Management Training: The DoD Plan for the Certification of Pesticide Applicators - [http://afpmb.org/pubs/dir\\_inst/415007MV1p.pdf](http://afpmb.org/pubs/dir_inst/415007MV1p.pdf) (CD)
11. EBUSOFFINST 4200.1: Department of the Navy Policies and Procedures for the Operation and Management of the Government Commercial Purchase Card Program - [http://www.acq.osd.mil/dpap/Docs/pcard/DoN\\_OI\\_4200-1a.pdf](http://www.acq.osd.mil/dpap/Docs/pcard/DoN_OI_4200-1a.pdf) (CD)
12. Ventura County Agricultural Commissioner - <http://portal.countyofventura.org/portal/page/portal/AgCommissioner>

## 3 Operations

### 3.1 Integrated Pest Management

#### 3.1.1 Federal Regulation and Policy

By Presidential executive order of October 5, 2009, federal agencies are required to promote pollution prevention and eliminate waste by implementing integrated pest management and other appropriate landscape management practices. US Code states "Federal agencies shall use Integrated Pest Management techniques in carrying out pest management activities and shall promote Integrated Pest Management through procurement and regulatory policies, and other activities." (7 USC Title 7, Chapter 6, Subchapter II, Sec. 136r-1) It is DoD policy to "incorporate sustainable Integrated Pest Management (IPM) philosophy, strategies, and techniques in all aspects of DoD and Component vector control and Integrated Pest Management Planning, training, and operations including installation Integrated Pest Management Plans and other written guidance to reduce pesticide risk and prevent pollution." (OPNAV 6250.4 SERIES).

#### 3.1.2 What is IPM

"A planned program, incorporating continuous monitoring, education, record-keeping, and communication, to prevent pests and disease vectors from causing unacceptable damage to operations, people, property, material, or the environment. IPM uses targeted, sustainable (effective, economical, environmentally sound) methods, including education, habitat modification, biological control, genetic control, cultural control, mechanical control, physical control, regulatory control, and where necessary, the judicious use of least-hazardous pesticides" (DoDI 4150.07 and OPNAVINST 6250.4B). There are significant differences between IPM and "traditional" pest control methods. Table 3-1 compares the two methods.

In IPM programs, treatments are not made according to a predetermined schedule. Rather, they are made only when and where monitoring has indicated that the pest will cause unacceptable economic, medical, or aesthetic damage. Treatments are chosen and timed to be most effective and least-hazardous to non-target organisms and the general environment.

Under an IPM program, execution of individual pest management practices involves the following steps:

- **Identify** pests and possible natural enemies;
- **Develop plans/strategies**, an integration of treatment methods, that are effective against the pest, least disruptive to natural controls, and least hazardous to human health and the environment;
- **Establish action thresholds for pests** when control will be initiated. In determining threshold levels, the amount of aesthetic or economic damage that can be tolerated must be correlated with the population size of pests, natural enemies, time in the season, and/or life stage of the pest or host;
- **Monitor pest population** for regular sampling of pest and natural enemy populations. Monitoring is an ongoing activity;
- **Control pest** (optional);
- **Document results**; and
- **Evaluate/redesign plan** to determine the outcome of treatment actions.

Controlling pests has traditionally been the responsibility of the pest control operator. **In IPM, preventing and controlling pests is the responsibility of all personnel on the installation.** The diversity of responsibilities for managing pests is reflected in the individual pest management project sheets.

**Table 3-1. Comparison of Traditional Pest Control and IPM Methods**

<b>Pest Management</b>	<b>Traditional Pest Control</b>	<b>IPM</b>
<b>Program Strategy</b>	Reactive	Preventive
<b>Customer Education</b>	Minimal	Extensive
<b>Potential Liability</b>	High	Low
<b>Emphasis</b>	Routine pesticide application	Pesticides used when exclusion, sanitation, and other non-chemical methods are inadequate
<b>Inspection and Monitoring</b>	Minimal	Extensive
<b>Pesticide Application Frequency</b>	By schedule	By need
<b>Pesticide Application Target</b>	Area-wide spraying	Spot treatment of areas where pests are found
<b>Customer Involvement in Preventing Pests</b>	Minimal	Extensive

### 3.1.3 IPM Compliance

Government representatives shall assess the PMSP's compliance with IPM. This may include:

- Reviewing the approved pesticide list for use of less toxic pesticides, baits with sustainable control, short-residual and pest-specific products, and products used for spot treatment rather than broadcast application.
- Contractor work plans and partner pest management plans that incorporate IPM.
- Reviewing pest management records to ensure that only approved pesticides are used, spot applications are performed, non-chemical methods are used, and routine surveys are being performed.
- Observing pest control service calls to ensure PCOs identify conditions conducive to pest infestations, provide information to building occupants on how they can prevent pests, use only approved pesticides, perform spot treatments, properly apply baits, conduct routine surveys, and monitor baits / bait stations / traps.

### 3.1.4 Integrated Pest Management Project Sheets

The IPM project sheets in Appendix H provide guidelines for the integrated control of pests at the NBVC. They may be used as a reference for surveillance and non-chemical and chemical control alternatives. Additional surveillance and control guidelines for public health pests are located in the Disease Vector Ecology Profile (DVEP) for California in Appendix J.

## 3.2 **Pests on NBVC**

### 3.2.1 Household Pests

Household and peridomestic arthropods comprised 36% (482/1325) of the service visits on NBVC in 2009 (Figs. 3-1 and 3-2). Some of these pests are venomous (spiders, wasps and bees) and can cause injury or have the potential to transmit disease (fleas), but the majority of them are nuisance pests which have an effect on morale. The primary pests were:

- **Ants.** Ants are the predominant household pest. Ants are a nuisance and do not have any medical importance since fire ants are not a local problem.

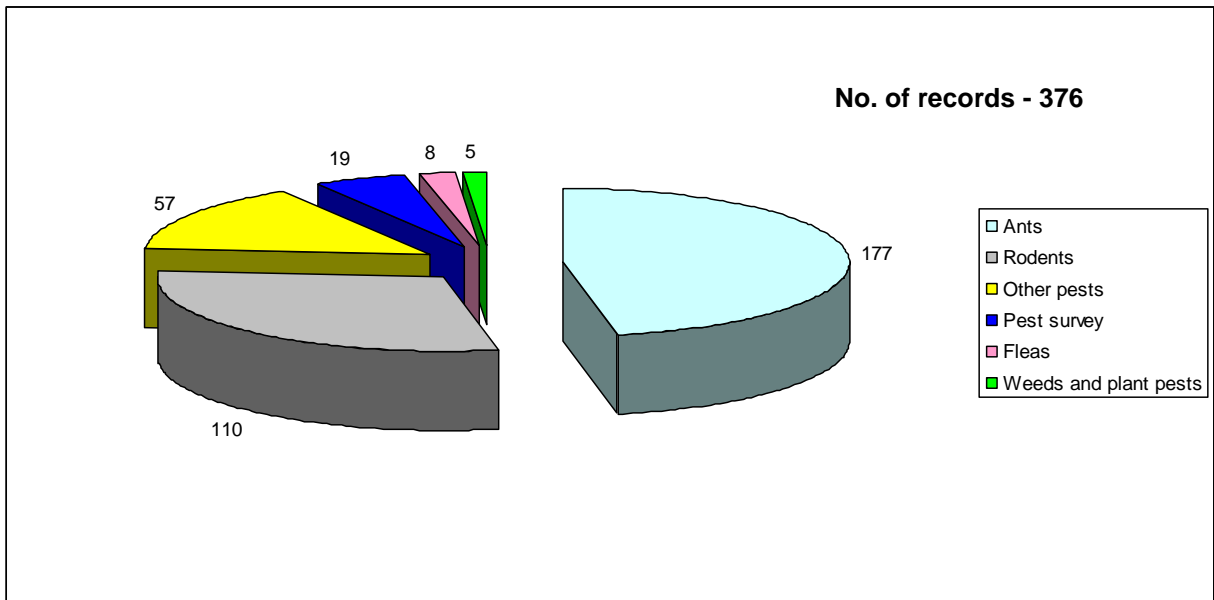


Figure 3-1: Pests by number of pest management service records, NBVC Port Hueneme, 2009.

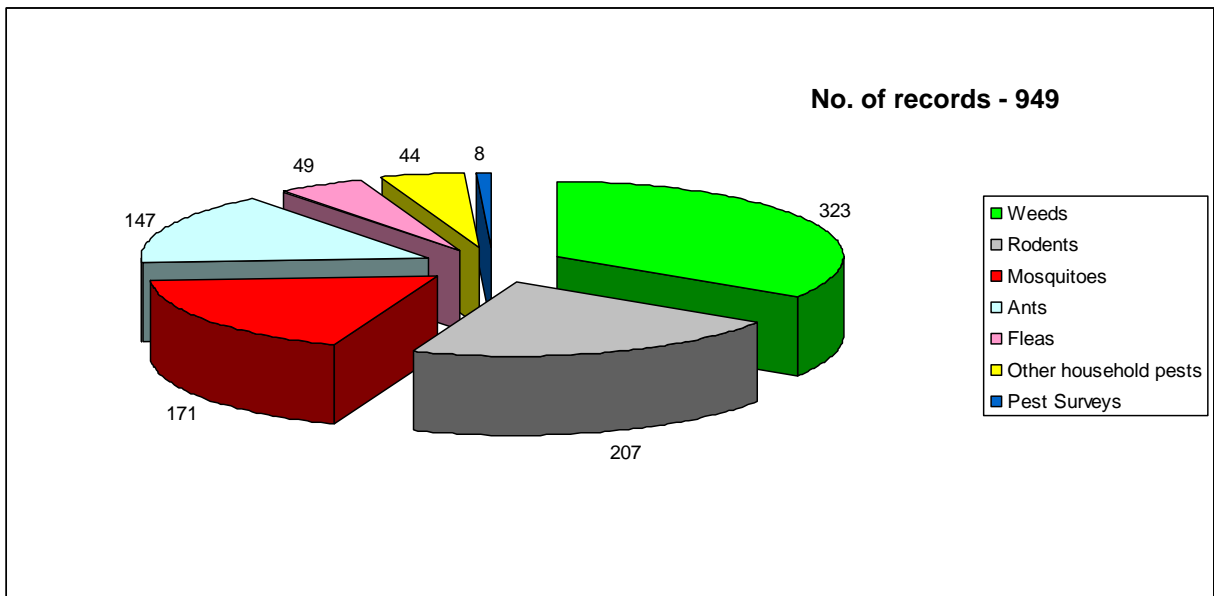


Figure 3.2: Pests by number of pest management service records, NBVC Point Mugu, 2009.

- Other pests included cockroaches, crickets, spiders and wasps and bees. Cockroaches are associated with food service areas while crickets and spiders are common household invading pests. Wasps and bees are potential public health hazards and become a problem when their nests or swarms are located close to buildings or areas through which personnel may walk.
- Fleas. Fleas are primarily a pest in housing, but some have been found in industrial buildings. Fleas in housing are associated with pets, but feral animals may be the source in industrial areas.

### 3.2.2 Rodents and Other Vertebrate Pests

Rodents are found on both Port Hueneme and NBVC Point Mugu and can cause property damage and can be a health hazard. Rodents included rats and mice in and around buildings but most of the rodent control services were for gopher control on improved grounds. Gophers cause damage to turf and other landscaped grounds. They can also pose a risk for injury if the burrowing occurs on recreational fields and residential lawns. Ground squirrels are another pest that causes damage to landscapes and create trip hazards with their burrows. Rodents can be a source of fleas and mites that can infest buildings and be a nuisance or possibly transmit diseases. Currently there is no evidence of commensal rat and mouse infestations on SNI.

### 3.2.3 Mosquitoes

Much of the pest control resources on NBVC Point Mugu are spent on mosquito surveillance and control. This is due to the numerous mosquito breeding areas on and around the installation and the significant problems that they cause. The most noticeable mosquito species that causes the greatest nuisance is *Aedes taeniorhynchus*. Known as the black salt marsh mosquito, this species breeds in the upper reaches of Mugu Lagoon and produce the greatest nuisance shortly after extreme high tides during the summer and early fall. It is a vicious day or night biter and will fly long distance to feed on large mammals and humans. Because of this ability, mosquito nuisance problems as far away as Simi Valley and Malibu can be traced to breeding sources on NBVC Point Mugu. The installation contains the largest habitat for these mosquitoes on this part of the Southern California coast. *Culex tarsalis* and *Cx. pipiens quinquefasciatus* are the two species that can transmit mosquito-borne encephalitis virus and breed in permanent and semi-permanent water bodies. *Cx. tarsalis* larvae are more likely to be found in freshwater drainage ditches, ponds, and marshes in and around the installation. *Cx. pipiens quinquefasciatus* commonly breed in backyard sources such as planters, gutters, and other human-made items that hold water. For more information on mosquitoes and mosquito-borne diseases see the Integrated Pest Management Plan for Mosquitoes and the Emergency Vector-borne Disease Control Plan in Appendix J.

### 3.2.4 Weeds

Most weed control is conducted on NBVC Point Mugu. Weeds can cause operational hazards such as providing harborage for bird and animal strike hazards and creating foreign object debris (FOD) on the airfield. Overgrown weeds are also a fire hazard around buildings and at the fuel farm. Along fence lines the plants can obscure line-of-site that can impact Anti-terrorism force protection (ATFP). Invasive weeds are also a threat to the environmentally sensitive habitats on NBVC Point Mugu. The installation is required to prevent the introduction of invasive non-native plants and control plants that affect the quality of natural habitats. This includes the removal of plants that had been intentionally planted as ground cover but has spread to areas where they have a detrimental impact. Invasive plants include ice plant, Myoporum, tamarisk, giant reed, pampas grass and beach grass.

## 3.3 **Pest Management Operations**

### 3.3.1 Industrial Buildings

Pest prevention in buildings involves non-chemical means such as custodial services and enforcement of sanitation standards. When pest control services are required control methods include liquid pesticide applications, insecticidal and rodenticide baits, and rodent trapping.



Under CPL 3 surveillance and treatment of nuisance pests are limited to administrative and areas requiring increased sanitation. Pest surveillance is not conducted at industrial buildings; control is performed based on customer complaints. Outdoor pesticide applications include the use of residual insecticides which provides moderate term control of ants and other invading arthropods. All pesticides used in and around buildings are low in toxicity.

### 3.3.2 Food Handling Establishments

Food service facilities on NBVC include:

- NBVC Port Hueneme
  - NEX Food Court (Bldg. 1512)
  - Naps Southern Grill (Bldg. 1467)
  - 19<sup>th</sup> Hole Grill (Bldg. 1537)
  - Kegler's Korner (Bldg. 1167)
  - Galley (Bldg. 61)
  - Bard Mansion (Bldg. 36)
  - 9<sup>th</sup> Hole Snack Bar (Bldg. 899)
- NBVC Point Mugu
  - Subway Sandwich (Bldg. 16)
  - Flightline Cafe (Bldg. 227)
  - Galley (Bldg. 20)
- NBVC San Nicolas Island
  - Galley
  - The Club

Pest control is a priority in food handling establishments since they have the ability to contaminate food that may result in food-borne illness. All of these facilities are on the pest control recurring work schedule and are visited at least once each month. Cockroaches and ants are occasionally found in food service facilities. Pest prevention and control methods include sanitation, spot pesticide treatments, and bait applications. NBVC PMTs conducts food service sanitation inspections monthly at these facilities and is responsible for enforcing sanitation and hygiene.

### 3.3.3 Military Family Housing

The contracted PMSP has submitted a pest management plan that is included in Appendix H. They provide weekly service for surveillance and control of cockroaches, ants, mice, spiders, and crickets. The landscape maintenance contractor may subcontract with these PMSPs to provide control of turf and landscape pests such as gophers and weeds. The contractors use non-chemical control such as glue boards, pheromone traps, mechanical traps, ultra-violet light traps, vacuums, and exclusion when appropriate. Pesticides include the use of low toxicity and EPA-classified "minimum risk pesticides". Landscaping practices such as the use of drought tolerant plants, efficient irrigation, and low density vegetation around houses can reduce the risk of pests. Maintenance of housing should include repairing window and door screens, vent screens, and damage to buildings that could allow pest entry. The housing manager should ensure that residents are aware of the conditions that contribute to pest infestations such as poor sanitation, accumulation of debris in backyards, and standing water.

### 3.3.4 Grounds Maintenance

Grounds maintenance is performed on improved and semi-improved grounds. Pest management during grounds maintenance may involve weed control, control of pests and disease on plants, trees and turf, and control of vertebrate animals (i.e. squirrels, gophers) that may destroy plants and turf. Mechanical removal of weeds and mowing are routinely performed. An herbicide containing glyphosate (Roundup®) is the primary means of chemical control. Grounds maintenance also includes weed control in drainage ditches, which may contribute to mosquito control and bird habitat removal with-in primary Surface Area. Weed control is performed along roadways, railways, fence, and at fuel farms where they pose fire and visibility concerns.

### 3.3.5 Wildlife Conflict Management

Predatory non-native and feral animals are a threat to protected species management throughout NBVC. The purpose of the program is to remove non-native and specific native predators from the breeding, foraging, and sheltering habitat areas of the light-footed clapper rail, western snowy plover, and California least tern. Removal of these animals is done by a PMSP contracted by the Environmental Division. All non-native predators and some targeted native problem wildlife will be removed from the specific habitats to which they harm. Management guidelines are provided in the INRMP. Feral dogs and cats can be a source of human injury and disease. A pet microchipping program has reduced the problem of lost pets becoming feral. The Chief of Naval Operations (CNO) prohibits personnel from feeding and encouraging the presence of feral animals in a policy letter (8). Guidelines for managing feral animals are found in AFPMB TG No. 37: *Guidelines for Reducing Feral/Stray Cat Populations on Military Installations in the United States*. No pets are allowed on SNI.

#### 3.3.5.1 *Bird Aircraft Strike Hazard (BASH)*

The runways at NBVC Point Mugu are surrounded by bird activity that pose a significant safety risk to aircraft landings and take offs. Wetlands that attract a wide variety of birds almost completely surround both runways. A BASH plan (NBVCINST 3750.5 series) has been developed for the installation and a Bird Hazard Working Group comprised of operations staff, aviation safety, public works and environmental personnel develop to execute the plan. Bird management is conducted by the Environmental Division and is executed by USDA APHIS Wildlife Services. The birds of concern include waterfowl, raptors and turkey vultures. Bird management operations involve monitoring, relocation of birds, deterrence, and lethal control. Scare devices such as propane cannons and hand-held pyrotechnics are the primary tools. Due to the environmentally sensitive nature of the wetlands, habitat modification is difficult. Bird deterrence methods include aquatic weed control to remove habitats, installing bird barriers across drainage canals, removal of roost sites and ground squirrel control. Other tactics such as the use of a bird effigy for repelling turkey vultures has been used experimentally. In the event of bird strikes on aircraft, the remains of the birds are collected for identification and to assess risk. The program manager also responds to nuisance bird problems in and around hangars and on aircraft. Management of birds other than English sparrows, rock doves (pigeons) and starlings requires a permit under the Migratory Bird Treaty Act (MBTA). Bird management information is found in Appendix H.

#### 3.3.5.2 *Bats*

Mexican Freetailed bats (*Tadarida brasiliensis mexicana*) are the predominant species of bat on NBVC Point Mugu. Yuma Myotis (*Myotis yumanensis*) have also been reported. Bats are a beneficial species that consume large quantities of insects including mosquitoes and other pest insects. The Environmental Division encourages bat populations in wild areas through a series of bat houses. However, bats can be a pest problem and a public health threat due to their susceptibility to rabies and should be controlled around buildings. Control is primarily through exclusion and non-lethal removal. A bat management plan has been developed and recommendations have been implemented. Pest management information and the management plan for bats are in Appendix H

### 3.3.6 Mosquito Surveillance and Control

Mosquito control is included in the pest control contract, but differs greatly from structural pest control in that the risk of adverse environmental affects is greater if pesticides and pest management practices are applied improperly. Historically, nuisance mosquitoes have been a major seasonal problem (May – October) on NBVC Point Mugu due to the tidal wetlands and agricultural drainage. Many past mosquito control operations have been focused on the Mugu lagoon. Ground application with the biorational pesticide, *Bacillus thuringiensis israelensis* (Bti), has been the primary control method. Ultra low volume (ULV) application of Malathion by ground vehicle has been used for adult mosquitoes in residential areas. Habitat modification has been effective in the past including increasing the tidal flow through culverts under roadways. Tidal marsh restoration projects are currently underway and have been shown to be effective in reducing mosquito larval populations (R. Dow, pers. Com.). A mosquito management plan is included in Appendix M.

### 3.3.7 Golf Course Pest Management

Turf and plants on the golf course at NBVC Port Hueneme are managed to playing and aesthetic standards set by MWR. Moss on the putting greens is a primary pest. Other turf pests such as fungus and nematodes are potential problems. Ground squirrels are major pests on the course and driving range at Pt. Mugu. Chlorophacinone rodenticide (Rozol®) is the primary chemical control method. The squirrels on the driving range may attract predatory birds (raptors) that pose an aircraft strike hazard. An MWR golf course superintendent who is a DoD certified pesticide applicator conducts the operations and maintains a pest control shop at NBVC Port Hueneme.

### 3.3.8 Non-native / invasive weed control

Invasive weeds are encroaching upon critical habitats for endangered and threatened bird species on NBVC Point Mugu. The encroachment of iceplant (*Carpobrotus* spp.) on beach sand dunes reduces the breeding habitat for California Least Terns and Snowy Plovers. Other invasive plants such as Myoporum (*Myoporum laetum*) and Giant Reed (*Arundo donax*) are nuisance weeds in wildlands as well as along roadways on the wetlands of Pt. Mugu. The Environmental Division is responsible for invasive weed control and conducts work through a self-help program or through a contract PMSP. The impact of invasive weeds is described in Section 5.7.6.2 of the installation Integrated Natural Resources Management Plan (INRMP). A plan for management of these weeds is provided in Appendix H.



**Figure 3-3: Herbicide control of iceplant on NBVC Point Mugu. (U.S. Navy photo)**

### 3.3.9 Use of Pesticides by Deployable Units

The Naval Mobile Construction Battalions (NMCB) homeported at NBVC Port Hueneme have preventive medicine technicians (PMT) on their medical staffs. PMTs are Category 8 DoD-certified pesticide applicators. Their primary pest management duties are performed on deployment, and pesticides are usually not procured while in garrison. Units may purchase DEET topical and permethrin uniform-applied insect repellents and store them. Neither requires specialized pesticide storage, but permethrin is flammable and must be stored in a flammable material locker. Only PMTs and other certified pesticide applicators are authorized to mix and apply the concentrated permethrin repellent formulation to field uniforms. Permethrin is highly toxic to aquatic organisms and uniform treatment operations must take precautions to prevent the chemical from entering storm water or other bodies of water.

### 3.3.10 Pesticide Retail Sales Displays

#### 3.3.10.1 *Locations*

Pesticides for personal residential use by DoD personnel and their dependents are sold at the Commissary and at the NEX garden store on NBVC Port Hueneme and at the Mini NEX at NBVC Point Mugu. The Commissary and Mini NEX sell primarily aerosol and bait formulations of pesticides for control of household pests and pet-related products. The garden store sells pesticides for household and garden pests. These pesticides may be of high toxicity and be labeled with “Warning” or “Danger” signal words on the label.

#### 3.3.10.2 *Display Requirements*

The U.S. Food Code Chapter 7 (7-201.11) states that poisonous or toxic pesticides “shall be stored so they can not contaminate food, equipment, utensils, linens, and single-service and single-use articles.” This can be accomplished by 1) “Separating the poisonous or toxic materials by spacing or partitioning;” and 2) “Locating the poisonous or toxic materials in an area that is not above food, equipment, utensils, linens, and single-service or single-use articles.” Pesticide containers “shall bear a legible manufacturer’s label” (Food Code (7-101.11)). The following restrictions apply to pesticides displayed for retail sale:

- No Category I pesticide products marked “Danger, Poison” on the label shall be procured, displayed or sold for retail sale. (OPNAVINST 6250.4B)
- Pesticides sold in retail stores will only be used for personal relief in Base housing or outside of NBVC only. They may not be used by uncertified personnel in installation workspaces or other DoD property. (OPNAVINST 6250.4B)
- Per the pesticide label, pesticides will be displayed out of the reach of children. (FIFRA)
- Only pesticides registered by the EPA (excluding EPA exempt products) for use in California will be stocked and sold. (FIFRA)

For specific pesticide storage requirements consult the product label. The Preventive Medicine Department is responsible for inspecting pesticide retail sale displays in accordance with OPNAVINST 6250.4B and NAVMED P-5010. Guidelines for pesticide display and sales in military exchanges are given in AFPMB TG 45: *Storage and Display of Retail Pesticides*. Online training for NEX employees who advise residents about home and garden pesticides is available at <http://www.ipm.ucdavis.edu/IPMPROJECT/retailtraining.html>. This will help NEX employees make residents aware of IPM and provide information on how to use pesticides safely.

### 3.3.11 Integrated Pest Management on NBVC

The NBVC IPM program includes of the following:

- Integrated Pest Management Plan. This Plan documents the integrated pest management program on NBVC and identifies the strategies for controlling pests. IPM is emphasized in the housing contractor’s Application of Pesticides Plan (see Appendix H).
- Surveillance. Pest surveillance is conducted routinely by all PMSPs to determine the most effective control methods. Larval mosquito control on NBVC uses extensive surveillance to identify larval breeding and determine treatment sites.
- Exclusion. Exclusion is used to keep rodents, birds and insect pests out of buildings.
- Non-chemical Control. Trapping is a frequently used control method for rodents and gophers.
- Vegetation maintenance. Native and drought-tolerant plants are used for landscaping. Weed control in landscaped areas is primarily by hand pulling.
- Airfield bird control. Bird prevention and control uses non-chemical methods including scaring, exclusion, and habitat modification.
- Mosquito control. Mosquito control emphasizes preventing biting adult mosquitoes by controlling larval mosquitoes at their source. The primary insecticide, *Bacillus thuringiensis* var. *israelensis* (Bti) is low toxicity, target specific, and has minimal impact on the environment.
- Communication. The IPMC and PCPAR communicate pest control issues with customers. The PCPAR communicates routinely with the pest control and grounds maintenance contractors to ensure safe and effective control of pests. The PCPAR also communicates with facility managers regarding sanitation and pest prevention.

- Self-help. The self-help program weed control program uses mechanical removal as the primary control method and, if necessary, spot treats with low toxicity herbicides.
- Pesticide use. “Minimum risk”, “reduced risk”, and less toxic pesticides are used by pest control and the housing contractors.
- Records. All contractors use the NOPRS to record and report pest management operations.

### 3.3.12 Animal Trapping

The California Department of Fish and Game (DFG) regulates animal trapping, in part, to ensure that trapped animals are treated humanely. Regulations include:

- Body-gripping traps are prohibited; steel-jawed leghold traps are prohibited unless this is the only method available to protect human health or safety (Fish and Game Code §3003.1)
- It is unlawful to pursue, drive, or herd any bird, or mammal with any motorized water, land, or air vehicle (Fish and Game Code §3003.5)
- It is unlawful to fail to visit and remove all animals from traps at least once daily. (Fish and Game Code §4004)
- It is unlawful to remove or disturb the trap of any licensee while the trap is being used by the licensee on public land or on land where the licensee has permission to trap (Fish and Game Code §4009).
- All furbearing and nongame mammals that are legal to trap must be immediately killed or released. Unless released, trapped animals shall be killed by shooting where local ordinances, landowners, and safety permit. This regulation does not prohibit employees of federal, state, or local government from using chemical euthanasia to dispatch trapped animals (California Code of Regulations §465.5)

Additional regulations are found in Appendix C.

### 3.3.13 Prohibited Operations and Devices

#### 3.3.13.1 *Application of liquid and dust formulations in occupied spaces*

“Installations shall not permit the application of liquid, dust, or aerosol pesticide formulations in any space occupied by unprotected personnel. However, pesticides contained in gel or paste bait formulations may be applied in occupied spaces in accordance with the pesticide label directions.” (OPNAVINST 5090.1C Para. 17-4.13)

#### 3.3.13.2 *Preventive or Scheduled Pesticide Treatments*

“Regularly scheduled, periodic pesticide applications are not approved for DoD property except in situations where the IPM plan clearly documents that no other technology or approach is available to protect personnel or property of high value. Installations shall not use preventive pesticide treatments, to include automated misting devices, unless the appropriate pest management consultant has given approval based upon current surveillance information or records documenting past disease vector or pest problems that require this approach.” (DoDI 4150.07, Para. E4.10.3). Contact the NAVFAC Southwest PPMC for pesticide treatments that appear to be of a preventive nature.

#### 3.3.13.3 *Electrically Operated Devices*

“Electromagnetic exclusion or control devices, ultrasonic repellent or control devices, and outdoor devices for electrocuting flying insects are not approved for use on DoD installations. However, indoor devices for electrocuting flying insects can be used when selected, purchased, located, and used in accordance with AFPMB TG 25: *Devices for Electrocutation of Flying Insects*.” (DoDI 4150.07, Para. E4.10.1)

## 3.4 **Pesticide Management**

Proper management of pesticides will ensure a safe and cost-effective pest management program. Management of pesticides includes the proper selection of pesticides, pesticide approval, procurement, storage, mixing, use of pesticide application equipment, and clean-up. The pesticide label provides most of the information needed to manage pesticide use and must be affixed to the container at all times.

3.4.1 Pesticide Use

Pesticides are an integral part of the NBVC IPM program. Pesticides can provide a rapid knock down of pests that are an imminent health or mission-related threat, or where there is little tolerance for pests (i.e. food service facilities). Herbicides can be an efficient means of weed control in large areas. Table 3-1 is a list of pesticides used on NBVC by the PMSPs during 2008. This does not include agricultural pesticide use. A list of pesticides proposed for use in agricultural areas is included in Appendix E. The largest quantity of pesticides used on the installation was herbicides. This is because of the large areas where weeds are controlled and the high concentrations of herbicide used. All of the insecticides listed are low toxicity; some such as clove and rosemary oil are classified by the EPA as minimum risk pesticides and do not require EPA registration (see section 3.4.2). Some pesticides contain active ingredients (i.e. fipronil) or are formulated (i.e. baits) to take advantage of the biology and behavior of pests to eliminate the source of pest breeding and can provide long lasting control. Pyrethrins and pyrethroids (i.e. permethrin) insecticides are safe for use around humans and terrestrial animals, but can be highly toxic to aquatic organisms. Glyphosate was the primary herbicide used. Diphacinone and brodifacoum are used in anti-coagulant rodent baits and can be highly toxic to humans and other mammals.

**Table 3-2 Quantity of pesticide active ingredients used on NBVC in 2009.**

Active Ingredient	Type	Amount applied (in pounds of active ingredient (PAI))	
		NBVC Point	
		Mugu	NBVC Port Hueneme
Abamectin B1	Insecticide	0	0.000313
Bifenthrin	Insecticide	10.42	5.14
Bti	Insecticide	125.10	0
Chlorfenapyr	Insecticide	0.03	0.32
Chlorophacinone	Rodenticide	0.01	<0.01
Chlorothalonil	Fungicide	0	22.52
Cyfluthrin	Insecticide	0.99	2.18
Deltamethrin	Insecticide	<0.01	<0.01
Difethialone	Rodenticide	<0.01	<0.01
Diphacinone	Rodenticide	0.12	0.01
d-trans allethrin/Phenothrin	Insecticide	<0.01	0.01
Fipronil	Insecticide	4.49	3.70
Glyphosate	Herbicide	2368.30	3.44
Hydramethylnon	Insecticide	0.01	0.12
Hydroprene	Insecticide	<0.01	0.02
Iprodione	Fungicide	0	9.72
Methoprene	Insecticide	14.17	0.01
Permethrin	Insecticide	3.14	0.27
Pyrethrin/Piperonyl butoxide	Insecticide	0.03	0.04
Resmethrin	Insecticide	2.51	0
Sulfometuron-methyl	Herbicide	181.43	0
Sulfuryl fluoride	Insecticide	0	10.06
	<b>Total:</b>	2710.75	57.57

For detailed information on these active ingredients consult the references (11, 15) at the end of this section.

3.4.2 Minimum Risk Pesticides

Minimum risk pesticides, such as those marketed under EcoEXEMPT® and other brands, are used by some pest management service providers (PMSP) as part of their IPM program.



According to the EPA, "Minimum risk pesticides are a special class of pesticides that are not subject to federal registration requirements because their ingredients, both active and inert, are *demonstrably safe* for the intended use." These pesticides are exempt from federal registration under section 25(b) of the FIFRA and are not labeled with an EPA registration number. California has also exempted these products from State registration. Since there is no federal review of these pesticides or their pesticide label, there is no federal review of the instructions for effective use of these products.

#### 3.4.3 Pesticide Selection

The following criteria should be used when selecting a pesticide:

- Determine the need for a pesticide. In many situations non-chemical control methods may be sufficient.
- Choose a pesticide that is least toxic.
- Choose pesticides and pesticide formulations with minimal environmental impact. For example, the environmental impact of pesticide spills is reduced when using a granular pesticide formulation rather than a liquid.
- Choose pesticides that treat the source of the pest problem. For example, contact insecticides applied to ant trails will only temporarily halt the infestation, while bait can kill the entire colony including the queen.

#### 3.4.4 Procurement

Public Works (PW) Pest Control purchases approved pesticides through the installation Hazardous Materials Management System (HMMS). All pesticides must be approved by the NAVFAC PPMC and included on the installation Authorized Use List (AUL). Pesticides are received at Bldg. 140 and all containers are tagged with barcodes for tracking. The pesticides are temporarily stored in Bldg 750 until the pest control operator retrieves it. Pesticides used by commercial contractors are included in the cost of the contract. These pesticides must also be approved for use and included on the installation AUL. Pesticides approved for use by all PMSPs are listed in Appendix E.

#### 3.4.5 Storage

Pesticides are stored by the MWR Golf Course in Bldg. 1532 at NBVC Port Hueneme. This is a single room building with walls that are not fully enclosed. It is secured by a locked chain link gate (3 CCR 6672). All other PMSPs do not have storage on the installation. Pesticides in storage facilities must be stored and secured in a manner that they do not pose a safety or environmental hazard (CCR 6670). If "Warning" or "Danger" labeled pesticides are stored then, in accordance with CCR 6674, the storage area must be posted with a sign that states:

DANGER  
POISON STORAGE AREA  
ALL UNAUTHORIZED PERSONS KEEP OUT  
KEEP DOOR LOCKED WHEN NOT IN USE

#### 3.4.6 Mixing

PMSPs must mix in appropriate areas that minimize the risk of safety and environmental hazards. Contracted pest control operators must mix pesticides in accordance with the contract specifications. Directions for mixing are found on the pesticide label. Persons mixing pesticides with water shall protect the water supply from back-flow of the pesticide mixture into the water supply (CCR 6610). They shall also ensure accurate measurement of concentrated pesticide to ensure proper application rates (CCR 6604). Precautions must be taken to minimize the risk of a pesticide spill and, should a spill occur, a spill kit is readily available for rapid containment and clean up. See Section 5.5 for pesticide spill prevention measures.

### 3.4.7 Application

#### 3.4.7.1 *Equipment*

The pest control and the grounds maintenance contractor use primarily hand-held equipment but also maintain large capacity power sprayers. Equipment shall be in good repair and safe to operate and applicators shall ensure that they use equipment suitable to ensure proper application of pesticides (CCR 6600). Proper equipment selection and maintenance is vital to the safe application of pesticides. Proper maintenance of equipment includes thorough cleaning of pesticide tanks after application to prevent corrosion and calibration to ensure proper application rate. The PCPAR shall inspect equipment used by contract applicators.

#### 3.4.7.2 *Containers*

Pesticides shall be stored and transported in containers with the original or a copy of the pesticide label attached. Containers other than the original pesticide container that are used for transporting pesticides to the job site must have a copy of the label attached. Service containers used for the application of a pesticide must have the following information on a tag attached to the container: name of party responsible for the container, the identity of the chemical in the container, and signal word of the chemical (3 CCR 6678). Containers commonly used for food, drink, or household products shall not be used to hold pesticides (3 CCR 6680).

#### 3.4.7.3 *Pesticide application*

Pesticides must be applied in accordance with label directions. Prior to and during pesticide application, applicators shall evaluate the equipment to be used, meteorological conditions, the property to be treated, and surrounding properties to determine the likelihood of harm or damage (CCR 6614). Applications of pesticides are timed to ensure maximum kill of the pest, and minimize drift of the chemical outside the target area. Regular on-site inspections by Government representatives should be performed to ensure safe and compliant applications.

### 3.4.8 Vehicles

All PMSPs provide their own vehicles. Pest control vehicles must carry pesticide spill kits in accordance with OPNAVINST 6250.4B. Pesticides shall not be transported in the vehicle's passenger compartment and pesticides shall be secured to vehicles to prevent spillage (CCR 6682). All contract personnel driving vehicles within the NBVC Point Mugu airfield movement area must comply with NBVC AOPS PD 3710. This is to ensure proper communications and foreign object debris (FOD) removal while on taxiways and runways. Contractor vehicles should be routinely inspected to ensure proper security of pesticides and that containers and equipment are not leaking. Guidelines for pesticide and equipment security are provided in AFPMB TG 7: *Installation Pesticide Security*.

### 3.4.9 Post-application Clean Up

The MWR golf course applicator shall clean equipment at an appropriate location that minimizes the risk of environmental contamination. Pest control equipment is to be thoroughly cleaned when necessary to prevent illness or damage to persons, plants, or animals from residues of pesticides previously used in the equipment (CCR 6608). Spray tanks and pesticide containers must be triple rinsed prior to storage or disposal. Disposal of pesticide spray tank rinsate should be performed by applying to a site listed on the pesticide label, used for future mixing of the same pesticide, or disposed of as hazardous waste. Rinsate shall not be allowed to enter storm drains. Other contract PMSPs are not allowed to clean equipment or dispose of waste on NBVC. All cleaning and disposal is performed off-base in accordance with applicable regulations.

### 3.4.10 Container Disposal

All empty pesticide containers, except aerosol cans, are triple rinsed and disposed of as solid waste (CCR 6684). Aerosol cans are turned in to the Hazardous Materials Management Program for proper disposal. If available, recycling of containers is preferred.



### 3.5 References

1. AFPMB TG 7: *Installation Pesticide Security* - <http://www.afpmb.org/pubs/tims/TG7/tg7.pdf> (CD)
2. AFPMB TG 17: *Military Handbook: Design of Pest Management Facilities* - <http://www.afpmb.org/pubs/tims/TG17/TG17.pdf> (CD)
3. AFPMB TG 20: *Pest Management Operations in Medical Treatment Facilities* - <http://www.afpmb.org/pubs/tims/TG20/tg20.pdf> (CD)
4. AFPMB TG 29: *Integrated Pest Management in and around Buildings* – <http://www.afpmb.org/pubs/tims/TG29/TG29.pdf> (CD)
5. AFPMB TG No. 37: *Guidelines for Reducing Feral/Stray Cat Populations on Military Installations in the United States* - <http://www.afpmb.org/pubs/tims/tim37.htm> (CD)
6. AFPMB TG 45: *Storage and Display of Retail Pesticides* – <http://www.afpmb.org/pubs/tims/TG45/TG45.pdf> (CD)
7. California Department of Public Health: *2006/2007/2008 Summary Table of Human (WNV) Infection* - <http://www.westnile.ca.gov/reports.php>
8. California School Integrated Pest Management Program - <http://www.schoolipm.info/>
9. Department of the Navy. CNO ltr 5090 Ser N456M/1U595820 or 10 Jan 2002; *Policy Letter Preventing Feral Cat and Dog Populations on Navy Property*. (CD)
10. Disease Vector Ecology Profile California (Appendix J, CD)
11. EXTOWNET: Extension Toxicology Network - <http://extoxnet.orst.edu/ghindex.html>
12. FDA 2005 Food Code - <http://www.fda.gov/Food/FoodSafety/RetailFoodProtection/FoodCode/FoodCode2005/default.htm>
13. Malone, D. 2007. *Asthma, Allergy and Insects*. *Pest Control News*, 74: 16-8. [http://lrs.afpmb.org/PZZQ9DSMPE15Y96TXSP9WSE1/arc/al\\_06\\_tit\\_fetch/1/182001](http://lrs.afpmb.org/PZZQ9DSMPE15Y96TXSP9WSE1/arc/al_06_tit_fetch/1/182001)
14. NAVFAC MO-310.2: *Urban Integrated Pest Management* (CD)
15. Pesticide Action Network (PAN) Pesticide Database - <http://www.pesticideinfo.org/>
16. University of California Statewide Integrated Pest Management Program - <http://www.ipm.ucdavis.edu/>

**This page left intentionally blank.**

## 4 Health and Safety

### 4.1 Pesticide Applicator Safety

“To ensure the safe use of pesticides, DoD personnel shall handle and apply pesticides in accordance with the product’s label directions and AFPMB Technical Guides concerning safety.” (DoDI 4150.07, Para. E4.5.3)

#### 4.1.1 Potential Occupational Hazards

The following hazards may be encountered by pesticide applicators or Government representatives that may be exposed while inspecting pest management operations. Occupational Safety and Health guidance is found in the OPNAVINST 5100.23G: *The Navy Occupational Safety and Health Program Manual*.

##### 4.1.1.1 *Direct Contact Toxic Chemical Exposure*

Many chemicals used as pesticides are also harmful to humans. The three routes of exposure to applicators are dermal, inhalation and ingestion. For applicators the most common route of exposure is dermal; frequently due to not wearing the appropriate personal protective equipment. The severity of the harmful effects of pesticides is determined by the duration of exposure and the toxicity of the chemical. The effects can be acute (rapid onset due to high dosage, high toxicity) or chronic (slow or delayed onset due to long term exposure to low dosage, low toxicity chemicals). The highest risk for severe acute chemical exposure occurs during pouring and mixing of concentrated pesticide resulting in high dose, rapid onset chemical poisoning. Chronic exposure can occur when the applicator fails to use appropriate PPE during frequent pesticide applications and the chemical accumulates in the body of the individual over a period of time leading to delayed or gradual onset of illness or injury.

##### 4.1.1.2 *Heat*

The use of protective equipment such as respirator, goggles, gloves, and coveralls increases the risk of heat injury. Heat injury can occur during long periods of work outdoors during warm weather or in enclosed spaces where machinery or equipment may generate heat.

##### 4.1.1.3 *Noise*

Some pesticide application equipment use gas-powered air compressors or pumps that produce noise hazards. Gas-powered backpack sprayers are particularly hazardous due to the proximity of the noise source to the ears.

##### 4.1.1.4 *Eye Hazards*

Eye hazards may result from chemical splashed into the eyes causing corrosive, toxic, or impact injury. Some pesticides are labeled “Restricted Use” due to their corrosive nature. Highest risk occurs during pesticide pouring, mixing, and application. During pesticide applications, chemicals may enter the eyes through “splashback” when applying the chemical under pressure into a crack or crevice or when applying pesticides overhead. Injury may also occur during equipment cleaning.

##### 4.1.1.5 *Infectious Zoonotic Disease*

Care should be taken when trapping and handling live or dead animals. Hantavirus may be transmitted from rodents to humans through body fluid exposure or when breathing aerosolized rodent excreta. Pest management providers may be exposed when handling rodent carcasses after trapping or handling traps contaminated with rodent urine and feces. Feral dogs, cats, skunks, raccoons, and bats may carry and transmit rabies through a bite.

##### 4.1.1.6 *Inhalation Hazards*

Many pesticides release hazardous vapors and are particularly hazardous in enclosed spaces. Some pesticides are labeled “Restricted Use” due to the high risk of inhalation injury. Personnel may be exposed during mixing, application, and cleaning.

#### 4.1.1.7 *Electrical and Fire Hazards*

Spot, crack and crevice applications may require application of a pesticide to areas near motors of refrigerators, compressors, and other machinery where it can become an electrical shock hazard. They may also be applied to areas near pilot lights where it becomes an explosion and/or fire hazard.

#### 4.1.1.8 *Head Impact and Sharps Hazards*

Surveys and pest control procedures may be done in attics, crawl spaces, basements, and other areas with low overheads where head impact hazards exist. Some devices used for bird roosting exclusion and rodent control have sharp edges and can cause cuts, puncture wounds, and abrasions.

#### 4.1.1.9 *Trip and Fall Hazards*

Trip hazards may occur when applicators are spraying without close attention to where they are stepping. Spraying around buildings where there are various obstacles (i.e. plants, utility boxes, plumbing) in the path of the applicator can be particularly hazardous. Pest control may also need to be performed from ladders, on roofs, in ceilings, and in trees. Wet surfaces on the ground or on elevated surfaces can increase the risk of trips and falls.

#### 4.1.1.10 *Exposure to Harmful Animals*

Venomous animals such as bees, wasps, rattlesnakes, and spiders are potential hazards when attempting to control them. Some of these are very dangerous due to envenomation and allergic reactions. Feral dogs, cats, coyotes, raccoons, and other large pest animals can inflict serious bites or clawing wounds.

### 4.1.2 Hazard Abatement

#### 4.1.2.1 *Training and Education*

Pesticide safety is a core requirement for DoD and commercial pesticide applicator certification and licensing programs. Safety topics included in the DoD and State training are listed in DoD Directive 4150.07-M Vol. 1: DoD Plan for the Certification of Pesticide Applicators. Topics are also given during recertification courses and continuing education training.

#### 4.1.2.2 *Read the Pesticide Label*

Pesticide labels are found on all pesticide containers used by installation PMSPs. The pesticide label provides directions for mixing, applying, and disposing of pesticides safely. It also includes a list of hazards to humans and first aid treatment. It may also include a list of personal protective equipment that must be worn and user safety recommendations. The label should always be read completely and thoroughly by the applicator before purchasing and using a pesticide. The label is a legal document mandated by Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

#### 4.1.2.3 *Personal Protective Equipment*

Personal protective equipment (PPE) should always be used when applying pesticides. The type and level of protection needed will be determined by the toxicity, formulation, and method of application of the pesticide. The pesticide label provides guidance on which PPE(s) to use.

Equipment may include:

- Respirator
- Chemical-proof gloves
- Coveralls or long-sleeve shirt and long pants
- Chemical-proof boots
- Hard hat
- Goggles
- Apron
- Faceshield
- Self-contained breathing apparatus (for fumigation)

PPE must be appropriate for the type and formulation of the pesticide being used. It is the applicator's responsibility to maintain their PPE. Contractors must provide appropriate PPE to their applicators.

#### 4.1.2.4 *Pest Control Vehicle Safety Devices*

Pest control vehicles should be equipped with safety devices and information. This may include:

- Emergency medical information including nearest emergency treatment center
- Fire extinguisher
- Spill kit
- First aid kit
- Cell phone or radio
- Drinking water supply
- Rinse water supply for washing pesticide off skin.

#### 4.1.2.5 *Pest Control Shop*

Bldg. 1510 is routinely inspected for safety and occupational health. The golf course superintendent is responsible for maintaining safe pesticide storage. The safety program at the pest control shop should include the following:

- Eye wash station and shower
- Active ventilation in pesticide storage and mixing areas
- Fire extinguishers
- Spill kit
- First aid kit and procedures
- Telephone
- A pesticide inventory with labels and MSDSs kept onsite and at the fire station.
- Warning signs
- Properly labeled pesticide and chemical containers

#### 4.1.2.6 *Pesticides and Equipment*

The risk of pesticide exposure can be reduced by selecting the appropriate pesticide and equipment for the job. Applying small amounts of low toxicity pesticide using appropriate and properly maintained equipment greatly reduces the risk of harm. Using pesticides that are formulated (i.e. contain emetics) or packaged (i.e. water-soluble packets) to minimize chemical exposure and increase safety should be considered when purchasing pesticides. Pesticide selection is addressed in section 3.4.3. Equipment should be tested with water prior to application to ensure proper application and that it is not leaking. Situational awareness, such as monitoring meteorological conditions and location, also prevents harmful exposure to pesticides.

#### 4.1.2.7 *Protection from Infectious Zoonotic Diseases*

Pest control personnel who handle trapped animals or dead animal carcasses should wear gloves to prevent exposure to potentially infectious body fluids. A respirator fitted with a high efficiency particulate air filter should be worn when entering enclosed spaces with large amounts of rodent feces that might be disturbed and become airborne. Additional protection from hantavirus can be provided by spraying dead rodents and rodent feces with a commercial disinfectant. This will kill hantavirus as well as wet the feces to prevent it from becoming airborne. Detailed guidance on rodent handling is found in AFPMB TG 41: *Protection from Rodent-borne Diseases with Special Emphasis on Occupational Exposure to Hantavirus*.

#### 4.1.2.8 *Medical Surveillance Program*

DoD pesticide applicators are required to be in a medical surveillance program depending on their hazard exposure. Applicators exposed to organophosphate and/or carbamate pesticides require baseline and periodic serum cholinesterase testing. All applicators will also require a respirator user certification exam. Guidelines for medical surveillance are found in the Navy and Marine Corps Public Health Center Technical Manual (NMPCH-TM OM 6260) Medical Surveillance Procedures Manual and Medical Matrix (Edition 10), March 2010. Contract PMSPs must provide for the health and safety of their own employees.

#### 4.1.2.9 *Operational Risk Management*

Operational Risk Management (ORM) is a decision making tool to reduce the risk of mishaps, whether in military contingency or support operations. Pest management operations pose risks to human health and the environment that affect the installation's mission that can be reduced and minimized by ORM. Pest management ORM uses the following process to minimize hazards:

- **Identify hazards** – the hazards may involve the pesticide or the application equipment (see list of hazards above)
- **Assess hazards** – determine the degree of risk based on the probability and severity of these hazards. For example, the risk may be high if a highly toxic pesticide is used daily.
- **Make risk decisions** – Develop risk control options. With controls in place decide whether benefits to the mission outweigh the risks involved.
- **Implement controls** – Controls are listed above.
  - Engineering controls – Example: use a less toxic pesticide for controlling the pest
  - Administrative controls – Example: place warning placards around pesticide vehicles and pesticide storage areas
  - PPE – Example: wear a respirator when a inhalation hazard exists
- **Supervise** – Follow-up to determine effectiveness of controls and monitor changes to hazards.

## 4.2 **Public Safety**

### 4.2.1 Potential hazards to public

#### 4.2.1.1 *Direct contact with pesticides*

Pesticide exposure can occur through dermal contact with a pesticide on a surface, inhalation of vapors, or ingestion of pesticide contaminating food or eating utensils. This type of exposure can occur if pesticide applications are done while unprotected building occupants are present, occupants are allowed entry into buildings before the pesticide has dried, or food and food preparation and serving equipment were not properly protected or cleaned after application.

#### 4.2.1.2 *Pesticide drift*

Pesticide drift occurs when a pesticide leaves the target treatment area and affects unprotected persons outside the area. This commonly occurs outdoors when winds can carry the pesticide off site. Drift can occur indoors if there is air movement or pesticides are drawn up through ventilation ducts. Pesticide applications that involve small pesticide droplets, such as fogging or ultra low volume (ULV) application, or dusts are most susceptible to drift.

#### 4.2.1.3 *Injury due to animals*

The use of an inappropriate pesticide may cause collateral injury due to an insufficient "knockdown" of the target pest. This can occur with bees and wasps. Some insecticides do not knockdown the insects rapidly and may actually excite them causing them to behave more aggressively and defensively. Unprotected persons near the pesticide application may become the target of their aggression. Injury can also occur when persons get too close to or try to release a trapped animal or try to capture feral animals by themselves.

#### 4.2.1.4 *Fumigation exposure*

Fumigants are highly toxic and can cause immediate death upon exposure. Fumigations can be performed in the housing area where it poses a potential hazard to neighbors and pets. During fumigation the chemical is injected into a tarped structure and allowed to remain for 24 hours. The highest risk of injury or death occurs if a person or animal were to enter the tarp during this period or after the tarp is removed and before the building is completely ventilated. The fumigant, when exposed to air, dissipates rapidly and readily.

### 4.2.2 Hazard Abatement

#### 4.2.2.1 *Proper timing of pest control operations*

Most indoor application of pesticides should be conducted when building occupants are not present. A notable exception to this is the application of pesticide baits that are enclosed in a

tamper-proof bait station that does not allow exposure to occupants or pets. The building occupants must remain out of the building to allow the pesticide to dry. Some pesticide labels are specific about re-entry times (time after application that occupants are allowed back into the treated building). Some pesticides such as fumigants provide specific directions on aeration of spaces to remove the pesticides prior to re-entry. Certain operations such as bee and wasp control or removal are best conducted after the area has been cleared of unprotected persons. Refer to the product label for specific information.

#### 4.2.2.2 *Preventing pesticide drift*

Pesticide drift from target areas to areas where humans, animals and plants can be affected can be reduced through the following means (adapted from University of Nebraska publication G1773: Spray Drift of Pesticides).

- Select low or nonvolatile pesticides.
- Read and follow the pesticide label. Apply a pesticide only if an application is warranted.
- Use spray additives that decrease drift within label guidelines. This will increase the droplet sizes and pesticide effectiveness.
- Use larger spray nozzle orifice sizes. This will give larger droplets and will increase the number of tank refills, but will improve coverage and effectiveness.
- Avoid high pressure. High pressure creates finer droplets; 45 PSI should be considered maximum for conventional broadcast spraying.
- Use drift-reduction nozzles. They will produce larger droplets when operated at low pressures.
- Use wide angle nozzles, low boom heights, and keep the boom stable.
- Drift is minimal when wind velocity is less than 10 mph. Do not spray when wind is greater or blowing towards sensitive crops, gardens, dwellings, livestock, or water sources.
- Use shielded spray booms. When banding, use shroud covers to keep chemical from drifting.
- For indoor applications, turn off ventilation and close doors to prevent air currents.

#### 4.2.2.3 *Prevent tampering with animal traps*

Caged animals can be very aggressive. Traps should be placed in areas where they will not be tampered with by humans or pets. Warning signs can be placed on the traps and area occupants can be warned of the risk of injury. Live and dead rodents in traps can also be a hazard for hantavirus. Traps should be placed in areas where humans or domestic animals will not be exposed to the rodents.

#### 4.2.2.4 *Fumigation Safety*

Fumigations are highly regulated by the State of California (3 CCR 6780 and 6782) due to the health hazards. The following are required for fumigation operations:

- Information on the fumigation and preparation for the operation must be provided to the building occupants.
- A barrier with warning signs must be placed around the exterior of the building to be fumigated.
- Warning signs stating "DANGER – FUMIGATION" must be posted on all entrances to the building including doors and windows.
- Warning signs must be posted on the tarp.
- Secondary door locks must be placed on doors.
- Contactors are required to provide personnel to stand guard at the fumigation site during the entire operation.

### 4.2.3 Special Safety Considerations

#### 4.2.3.1 *Child Development Center*

Children can be sensitive to pesticides and other chemicals. Parents are also concerned about potential hazards that their children may be exposed to and have a right to know about these hazards. Best practice is to minimize pesticide use in and around child development centers and schools, use only enclosed baits and low toxicity pesticides, do not apply pesticides when people are present, and inform staff and parents of any pesticides to be used on the property. The

Healthy Schools Act website (<http://www.schoolipm.info/>) provides information on IPM as a means of reducing the health risks of children due to pesticides.

#### 4.2.3.2 Food Service Areas

Food contaminated with pesticides can lead to pesticide poisoning. Sanitation and exclusion should be the primary means of preventing and reducing pest infestations. Pesticide use in food service areas should be limited to low-toxicity pesticides applied to cracks and crevices and baits. The area should be properly prepared for treatment by putting away utensils and equipment and covering food preparation services. After treatment the area should be thoroughly cleaned to prevent contamination.

### 4.3 Pest Control Accidents

#### 4.3.1 First Aid

First aid for pesticide accidents is included on the pesticide label. The applicator should be familiar with first aid procedures required for the pesticide they are using. A copy of the label must be available at the application site. For some pesticides, immediate first aid and medical treatment may be required.

#### 4.3.2 Medical Emergencies

All pesticide applicators or persons responding to an injured applicator should call the installation's emergency number (911) in the event of a medical emergency. CCR 6726 requires commercial pest control companies to post the name, address, and telephone number of an emergency medical care facility in the applicator's vehicle. For pesticide poisonings, a copy of the pesticide label should be given to the medical first responders or taken to the emergency medical facility. If cholinesterase-inhibiting pesticides (i.e. malathion) are used then the emergency room shall maintain the proper antidotes, atropine, and 2-pam chloride. Physicians and other medical personnel are required to report any pesticide related illness or injury to the Ventura County Public Health Department (805) 981-5101) within 24 hours in accordance with the California Health and Safety Code, Section 105200.

### 4.4 References

1. AFPMB TG No. 16: Pesticide Fires: Prevention , Control and Cleanup - <http://www.afpmb.org/pubs/tims/tim16.pdf> (CD)
2. AFPMB TG No. 20: *Pest Management Operations in Medical Treatment Facilities* - <http://www.afpmb.org/pubs/tims/TG20/TG20.htm> (CD)
3. AFPMB TG No. 41: Protection from Rodent-Borne Diseases with Special Emphasis on Occupational Exposure to Hantavirus - <http://www.afpmb.org/pubs/tims/TG41/TG41.pdf> (CD)
4. California School Integrated Pest Management Program - <http://www.schoolipm.info/>
5. Navy Environmental Health Center Technical Manual (NEHC TM) 6260: Medical Surveillance Procedures Manual and Medical Matrix (Edition 7) - [http://www-nehc.med.navy.mil/downloads/occmed/Medical\\_Matrix\\_Feb\\_2001.pdf](http://www-nehc.med.navy.mil/downloads/occmed/Medical_Matrix_Feb_2001.pdf) (CD)
6. Navy Safety Center - <http://www.safetycenter.navy.mil/orm/default.htm>
7. OPNAVINST 5100.23G: The Navy Occupational Safety and Health Program Manual (CD)
8. Reigart, J.R. and J. R. Roberts. 1999. Recognition and Management of Pesticide Poisonings. EPA, Office of Pesticide Programs - <http://www.epa.gov/pesticides/safety/healthcare/handbook/contents.htm> (CD)
9. University of Nebraska publication G1773: Spray Drift of Pesticides - <http://www.ianrpubs.unl.edu/eublic/live/g1773/build/g1773.pdf> (CD)
10. University of Nebraska publication EC2507: Safe Transport, Storage, and Disposal of Pesticides - <http://www.ianrpubs.unl.edu/eublic/live/ec2507/build/ec2507.pdf> (CD)
11. University of Nebraska publication G1736: Rinsing Pesticide Containers - <http://www.ianrpubs.unl.edu/sendlt/g1736.pdf> (CD)
12. University of Nebraska publication G758: Protective Clothing and Equipment for Pesticide Applicators - <http://www.ianrpubs.unl.edu/eublic/live/g758/build/g758.pdf> (CD)



13. University of Nebraska publication G1770: Cleaning Pesticide Application Equipment - <http://www.ianrpubs.unl.edu/epublic/live/g1770/build/g1770.pdf> (CD)

**This page left intentionally blank.**

## 5 Environmental Considerations



Figure 5-1: Mugu Lagoon. (U.S. Navy photo)

### 5.1 Environmental Management System (EMS) for Pesticides

This IPMP puts pesticide management within the framework of the DoD and Navy EMS. This Plan provides the tools and products to include pesticide management in the installation's overall EMS program.

#### 5.1.1 Department of Defense Policy

DoD policy states that "DoD Components shall adopt an environmental management system and work to integrate it in all core business areas." The goal is to "establish robust systems that sustain compliance, avoid risk and pollution, inform the public, and promote interoperability among the DoD components, other nations' militaries, and with industry." The remainder of this policy is found in the memorandum from the Under Secretary of Defense A,T&L dated 05 Apr 2002.

#### 5.1.2 What is an EMS?

An EMS is defined by the International Organization for Standardization (ISO) as "the part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy."  
(<http://205.153.241.230/ems/emsprimer/what.html>).

#### 5.1.3 Environmental Impact Log

An environmental impact log is used to identify the practices to be managed in an EMS. The log in Appendix I identifies the practices associated with pest management on NBVC. Personnel responsible for the practice, specific aspects of each practice, and the impacts on the installation's vulnerable assets are also identified for each practice.

#### 5.1.4 Internal Assessment Plan Practice Inventory

The success of an EMS depends on the ability for an installation to assess and correct itself. The Internal Assessment Plan (IAP) provides the basis for a self assessing and self correcting system. The IAP inventory lists the practices and practice-owners identified in the environmental impact log and creates a “checklist” for assessment. The IAP inventory for NBVC pest management is found in Appendix I.

### 5.2 **Environmental Considerations on the Pesticide Label**

If the pesticide is potentially harmful to the environment, information will be provided in the following sections:

- Directions for Use: If pesticide drift is a potential environmental hazard, then the directions may require certain application equipment and/or the addition of an anti-drift agent to the tank mix.
- Environmental Hazards: This section may indicate that the pesticide is particularly hazardous to specific animals (i.e. bees, fish). It will also provide information on how to avoid environmental damage.

### 5.3 **Managing Environmental Impact**

Many procedures to reduce the impact of pest management practices on vulnerable assets are already in place. Many of these are contained within existing NBVC environmental management plans.

#### 5.3.1 Pesticide Pollution

##### 5.3.1.1 *Synthetic Pyrethroids*

Pyrethroids are insecticides that are widely used for household, garden and agricultural pest control. Most were replacements for the more toxic and environmentally-hazardous organophosphate and carbamate insecticides. Recent State—wide surveys have indicated that some pyrethroids are being found in urban stream sediment and at least one chemical has been shown to be toxic to sediment dwelling organisms (5). The specific pyrethroids of concern are:

- Bifenthrin (i.e. Talstar®)
- Cyfluthrin (i.e. Cykick®, Tempo®)
- Beta-Cyfluthrin (i.e. Tempo Ultra®)
- Cypermethrin (i.e. Demon®, Cynoff®)
- Deltamethrin (i.e. Deltadust®)
- Lambda-Cyhalothrin (i.e. Demand®)
- Permethrin (i.e. Permanone®)
- Tralomethrin

Outdoor operations pose the greatest risk for pyrethroid contamination of surface water and stormwater runoff. Increased risk operations at NBVC that may use pyrethroids include landscape plant insect control, agricultural insect control, and uniform repellent treatment. DPR is reviewing pyrethroid use and their impact (3).

##### 5.3.1.2 *Pollution Prevention*

A pesticide is unique as a potential environmental pollutant. When it is applied properly for the correct target pest and to the target location, it is not considered a pollutant. When applied outside of the target area, then it becomes a pollutant. Pollution can occur during most pest management practices as the result of accidental spills, air and water emissions, and container disposal. Pollutants can be in the form of pesticide residues from equipment and container cleaning or as waste containers. The following pollution prevention best practices should be used on NBVC:

- Conduct surveillance first to determine the need for pesticide use.
- Apply pesticides and clean equipment away from storm drains to prevent storm water contamination.

- Do not pour pesticide container rinsate into drains. Apply rinsate to a site listed on the pesticide label, store rinsate to use for future pesticide mixing, or dispose of according to local regulations.
- Use less-toxic pesticides.
- When applying Permethrin repellent to uniforms outdoors: Do not mix or apply near storm drains or where water runoff will result in storm water contamination; Avoid overspray of pesticide onto the ground; and apply spray tank rinsate to uniforms.
- Minimize outdoor applications of pyrethroids and prevent runoff of insecticide into stormdrains and other bodies of water.
- Use spot spraying and crack and crevice applications rather than broadcast or baseboard spraying.
- Apply pesticides outdoors only when moderate to heavy rain is not forecast.
- Leave a buffer zone around catch basins and drainage ditches.
- Mixing pesticides and cleaning pest control equipment over a containment area that does not empty into storm drains.
- Using the proper amount of pesticide for the pest control job to prevent excess waste pesticide.
- Control pesticide drift to prevent chemicals from entering waterways.
- Having a pesticide spill kit with absorbent material readily available at the application, mixing and cleaning sites.
- Minimize pesticide storage on the installation through proper inventory management and not allowing contractors, other than the grounds maintenance contractor, to store pesticides on the installation.
- Use rodent traps rather than rodenticides.
- Do not use sticky traps in outdoor areas where birds or other non-target birds, mammals, or insects may get accidentally trapped.

Pesticide pollution prevention resources are available from the Urban Pesticide Pollution Prevention (UP3) Project (7).

#### 5.3.1.3 *Spill Prevention and Management*

Spill response equipment including adsorbent material are available at Bldg. PH-1510 and on pest control vehicles. Pest management personnel are trained on spill response procedures as part of their initial pest management certification training. All PMSPs are responsible for cleaning up spills and the ED is responsible for overseeing the cleanup process to ensure that it is performed properly. The greatest risk of a significant pesticide spill on NBVC occurs during herbicide transport since herbicides are often used in large quantities. Further information on preventing and controlling pesticide spills is contained in the AFPMB TG #15: Pesticide Spill Prevention and Management.

#### 5.3.2 Natural Resources Protection

Pest species can have devastating impacts on native plant and wildlife populations or can prevent colonization by native plants and wildlife. Conversely, the use of chemicals to control disease vectors and pest populations can also have negative impacts on native plants and animals on NBVC, especially the burrowing owl, monarch butterfly, and native bird species. Pest management operations include, but are not limited to, surveys, trapping, weeding, biological control, and pesticide use. The Integrated Natural Resources Plans (INRMP) for the NBVC Point Mugu and NBVC Port Hueneme provide detailed information on the natural resources found on the installations and are included in Appendix I. The INRMPs also list management objectives and recommendations to protect and enhance the natural resources programs. The objectives and recommendations as well as the impact on pest management of these objectives are listed in Table 5-1.

**Table 5-1: Natural resources protection and pest management**

<b>Installation</b>	<b>Objective</b>	<b>Planned Actions/Recommendations</b>	<b>Pest Management Impact(s)</b>
NBVC Point Mugu	Non-native plant eradication	Remove invasive plants that compete with native plants for space and survival, especially at Mugu lagoon	Control invasive species with responsible use of herbicides. Native plants should be used for landscaping because they rarely require fertilizer, pesticides, herbicides or water. Hand weeding and herbicide spraying should be evaluated in terms of effectiveness and their potential disturbance of native species.
NBVC Point Mugu	Implement a predator management plan	Control predators that pose a threat to threatened and endangered species (including coyotes)	Predator control should avoid or minimize impacts on non-target and especially on listed species. Toxicants that cause secondary poisoning are prohibited.
NBVC Point Mugu	Update and implement an Integrated Pest Management Plan	Identify expected pests, biological and natural alternatives to chemical controls, and least toxic pesticides for use around habitat for sensitive species. Establish timing, conditions, and procedures for pesticide application.	Chemicals need to be applied by a licensed applicator. Malathion misting for mosquito control may only occur when winds are onshore to prevent contamination of the lagoon and habitats occupied by listed species. Other best management practices need to be implemented.
NBVC Point Mugu	Update Bird Aircraft Strike Hazards (BASH) Plan	Reduce BASH incidents and propose measures that have no significant impacts on migratory birds and other natural resources.	Avoid or minimize adverse impacts to migratory birds and their habitats.
NBVC Port Hueneme	Prevent and control disease vectors and pest populations associated with the facilities and ships at CBC NBVC Port Hueneme	Prepare an Integrated Pest Management Plan to establish and maintain a safe, effective, and environmentally sound integrated pest management program on base. Prevent and control disease vectors and pests that may adversely affect readiness or military operations and that may adversely impact the natural environment on base.	Harmful chemicals should not be used in areas or during conditions when the chemical may enter waterways or natural habitat areas.
NBVC Port Hueneme	Protect and enhance listed,	Identify the potential impacts of base activities on listed species	Ensure pest management does not adversely affect native fish

**Table 5-1: Natural resources protection and pest management**

Installation	Objective	Planned Actions/Recommendations	Pest Management Impact(s)
	candidate, proposed listed, and Navy species of concern	and other sensitive species and perform basewide surveys. The spread and, sometimes the abatement, of disease vectors and pest populations on base also threaten native fish and wildlife populations.	and wildlife populations.
NBVC Port Hueneme	Revise the Base Exterior Architecture Plan	Ensure that future landscaping and grounds maintenance practices are conducted in a manner that will maximize benefits to native plant and wildlife species. Protect and enhance ecological integrity of wildlife corridors and buffer areas around development on base.	Grounds maintenance contractors should reference the IPMP section on environmentally-sensitive areas before conducting maintenance activities.
NBVC Port Hueneme	Protect and enhance ecological integrity of bulrush-cattail habitat on base, including, but not limited to, the structure and function of this natural habitat.	Pampas grass and other invasive species are key threats to maintaining the native bulrush-cattail habitat. Eradicate exotic plant species within the marsh and prevent future invasions.	Use weed removal services to eradicate invasive species. Provide a map of sensitive plants to person(s) performing the work.
NBVC San Nicolas Island	Protect threatened and endangered species	Remove feral animals	Ensure pest management minimizes harm to island fox and deer mouse populations. Restrict use of rodenticides to avoid secondary poisoning of foxes.
NBVC San Nicolas Island	Protect migratory birds	Remove feral cats and reduce Bird Aircraft Strike Hazards (BASH)	Make sure BASH reductions activities do not kill migratory birds.
NBVC San Nicolas Island	Exotic Plant Control	Minimize introduction of non-native plants and remove exotic plant species on island	Ensure chemicals do not affect native wildlife population. Use non-chemical removal methods to greatest extent possible.
NBVC San Nicolas Island	Pest Control	Minimize introduction of pest species, manage feral cat populations, and implement	Follow Integrated Pest Management Plan

**Table 5-1: Natural resources protection and pest management**

Installation	Objective	Planned Actions/Recommendations	Pest Management Impact(s)
		methods to control invertebrate pests.	

5.3.2.1 *Environmentally-sensitive Areas*

Environmentally-sensitive areas contain animal and/or plant species that are State or Federal listed as endangered or threatened. Table 5-2 lists endangered and threatened species (ETS) and their locations on NBVC and Table 5-3 lists sensitive species. The biotic and abiotic features of the species habitats in these areas are vital to the presence and survival of these species. Direct impact to the species or disturbance or damage of species habitats may be a violation of State or Federal law. Pest management activities, including non-chemical and chemical control methods, may impact these species. Impacts may include:

- Herbicide applications that damage or kill endangered or threatened (ET) plants or damages the vegetation that comprises the habitat of ET animals;
- Physical damage to plants by walking through the area while conducting pest control or through indiscriminant pulling of weeds.
- Insecticide applications that kill or harm ET insects or animals; insecticides can also kill insects that are food for ET animals or that are important pollinators of ET plants.
- Use of sticky traps outdoors where they can trap and injure non-target animals.

Pest management service providers (PMSP) shall minimize impact on these sensitive areas and shall consult the ED if any of their operations is conducted in close proximity to these areas and may pose an increased risk for adverse impact.

**Table 5-2: Federally Threatened and Endangered Species on NBVC.**

	Common Name	Scientific Name	Installation	Habitat Type	Other information
Plants	Salt marsh bird's beak	<i>Chloropyron maritimum maritimum</i>	NBVC Point Mugu	Marsh areas, primarily west of Runway 3.	Look for flags marking populations
Birds	California Least Tern	<i>Sterna antillarum browni</i>	NBVC Point Mugu	Beach areas; Ormond East Beach, Holiday Beach, western portion of the Eastern Arm.	Eggs are laid in depression in sand. Nests at risk of being stepped on.
	Least Bell's Vireo	<i>Vireo bellii pusillus</i>	NBVC Point Mugu	Riparian areas. Nest in willows and small shrubs near willows.	
	Light-footed clapper rail	<i>Rallus longirostris levipes</i>	NBVC Point Mugu	Marsh areas in Mugu Lagoon. Nests in Spiny Rush, cordgrass, and pickleweed.	
	Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	NBVC Point Mugu, NBVC San Nicolas Island	Sandy beaches, salt pannes, road shoulders, and overrun of runway.	Eggs are laid in depression in sand. Nests at risk of being stepped on.



**Table 5-2: Federally Threatened and Endangered Species on NBVC.**

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Installation</b>	<b>Habitat Type</b>	<b>Other information</b>
Mammals	Southern sea otter	<i>Enhydra lutris neresis</i>	NBVC San Nicolas Island	Associated with kelp forests off shore	
Fish	Tidewater goby	<i>Eucyclogobius newberryi</i>	Recently documented upstream from NBVC Point Mugu	Brackish waters of Calleguas Creek or Mugu Lagoon	
Amphibians	California red-legged frog	<i>Rana aurora draytonii</i>	Unlikely to occur at NBVC Port Hueneme	Riparian areas, such as adjacent to crane training area and retention basin pond.	
Reptiles	Island night lizard	<i>Xantusia riversiana</i>	NBVC San Nicolas Island	Vegetated areas and under scrap metal, wood, and other debris	

**Table 5-3: Sensitive species on NBVC.**

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Installation</b>	<b>Habitat Type</b>	<b>Other information</b>
Plants	Ventura marsh milk-vetch	<i>Astragalus pynostachyus</i> var. <i>lanosissimus</i>	Extremely unlikely to occur at NBVC Port Hueneme or NBVC Point Mugu	Upper salt marsh habitats	
	Coulter's goldfields	<i>Lasthenia glabrata</i> spp. <i>coulteri</i>	NBVC Point Mugu	Occurs in upper salt marsh, such as behind San Miguel housing and off of Main Road and Perimeter Road, and out in marsh.	Looks like a tiny sunflower.
Birds	Burrowing owl	<i>Athene cunicularia</i>	NBVC Point Mugu Less likely occurring at NBVC Port	Marsh areas and airfield grasslands. One sighting at dirt mound near Buildings 1421 and 1423 at	May likely be effected by ground squirrel control

**Table 5-3: Sensitive species on NBVC.**

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Installation</b>	<b>Habitat Type</b>	<b>Other information</b>
			Hueneme	NBVC Port Hueneme	
	Belding's savannah sparrow	<i>Passerculus sandwichensis beldingi</i>	NBVC Point Mugu	Salt marsh in Mugu Lagoon and associated wetlands. Nest in upper salt marsh vegetation.	Nests located in low growing marsh plants between Mar and Aug.
	California brown pelican	<i>Pelecanus occidentalis californicus</i>	NBVC Point Mugu NBVC Port Hueneme	Roosts on Mugu Lagoon sand and mudflats and on SWEF beach at NBVC Port Hueneme	
	Peregrine falcon		NBVC Point Mugu	Roosts on structures overlooking marsh or driftwood in marsh	
Reptiles	South-western pond turtle	<i>Clemmys marmorata pallid</i>	NBVC Point Mugu	Drainage ditches and streams. Nest in adjacent areas	
Invertebrates	Monarch butterfly	<i>Danaus plexippus</i>	NBVC Port Hueneme NBVC Point Mugu	May at times congregate on Eucalyptus trees	
	Sandy beach tiger beetle	<i>Cicindela hirticollis gravid</i>	NBVC Port Hueneme NBVC Point Mugu	Beach Dune habitats	

**5.3.2.2 Invasive Species Prevention**

Invasive species can cause damage to native habitats and introduce diseases to native plants and animals. Sources of invasive species include military vehicles returning from overseas locations or training areas where invasive species are found; off-road vehicles; landscape plants and equipment; and ships and aircraft. All military vehicles, aircraft, and materials that have been in contact with foreign soil and returning from foreign locations including Hawaii are required to be cleaned by the deployed unit and inspected by U.S. Department of Agriculture Plant Pest Quarantine Officers prior to disembarkation on U.S. soil per SECNAVINST 6210.2A, Quarantine Regulations of the Armed Forces. The purpose of these inspections is to prevent the introduction of disease causing organisms and plant pests. Although the inspections are generally thorough,

the equipment of recently redeployed units should be monitored to ensure that any introduced pests are destroyed. Any pests found on this equipment should be reported to the ED.

COMNAVREGSWINST 6200.1F requires inspection of ships arriving directly from foreign ports or from Hawaii to be inspected for agricultural pests prior to debarkation at ports in California. Navy ships are required to have Cooperator Plant Pest Quarantine Officers who conduct inspections while underway. Upon arrival in port a USDA Quarantine Officer will board the ship to verify that the CPPQO has conducted an inspection. Any prohibited materials found aboard the ship will be properly disposed of by Port Services to prevent entry into California.

An invasive plant prevention program is in place on NBVC to prevent invasive plants from being sold in the NEX garden shop. ED has developed a standard operating procedure (SOP) for NEX employees to detect and prevent the sale of invasive plants. A copy of the SOP is in Appendix I.

Another program currently under development by the ED is a biosecurity protocol for the supply barge that services NBVC San Nicolas Island. This is to prevent the introduction of invasive plants, nuisance animals and disease vectors and reservoirs onto the Island.

### 5.3.3 Pest Management Operations requiring Environmental Review

The following pest management operations require environmental program review:

- Weed and outdoor pest control in endangered/threatened species habitats and natural areas.
- Outdoor large area insecticide fogging.
- Pesticide applications to, over or adjacent to water bodies, waterways, or wetlands.
- Installation of bird barriers, exclusion devices, or repelling devices.
- Wildlife and feral animal control.
- Invasive species control.

### 5.3.4 Hazardous Materials and Waste Management

The appropriate use of pesticides usually produces very little hazardous waste. Rinsates containing pesticide residues usually have very small quantities of the chemical and are often applied to the target pest site. Large quantities of hazardous waste may be produced when a pesticide is not used by its expiration date. Hazardous waste may also be produced if a pesticide is not used up before the registration for that pesticide is cancelled and the stop-use date has occurred. These pesticides may be disposed of as Universal Waste. The Standards for Universal Waste Management are found in 40 CFR Part 273. Proper inventory management and pest management planning will prevent waste generation.

### 5.3.5 National Pollutant Discharge Elimination System Permit

By April 2011, all pesticide applications made directly into, above, and near protected waters defined in the Clean Water Act will require NPDES permits. Applications that are included are mosquito larvicide applications, aquatic weed control, and terrestrial weed control along water bodies if drift into water is unavoidable. Mosquito adulticides applied as a mist may also be included if the mist drifts over water. Currently California has General Permits for the discharge of aquatic pesticides for vector control and for aquatic weed control. A General Permit for insect adulticides is being drafted. Aquatic pesticide applications will require that the installation submit a Notice of Intent (NOI) to the local water agency. NBVC submitted an NOI to the Regional Water Quality Control Board in March 2009 for aquatic pesticides for mosquito control. Information on NPDES permitting for aquatic pesticides can be found at [http://www.waterboards.ca.gov/water\\_issues/programs/npdes/aquatic.shtml](http://www.waterboards.ca.gov/water_issues/programs/npdes/aquatic.shtml).

## 5.4 **References**

1. AFPMB TG 15: Pesticide Spill Prevention and Management - <http://www.afpmb.org/pubs/tims/tim15.pdf> (CD)
2. Defense Environmental Network and Information Exchange (DENIX) - <https://www.denix.osd.mil/>

3. DPR Pesticide Regulation. Pyrethroids Reevaluation - <http://www.cdpr.ca.gov/docs/registration/reevaluation/chemicals/pyrethroids.htm>
4. Environmental Management Systems Primer (from DENIX) - <http://205.153.241.230/ems/emsprimer/index.html>
5. Lubick, N. Oct. 2008. Pyrethroids are ubiquitous in California's urban streams. American Chemical Society. [http://pubs.acs.org/cgi-bin/sample.cgi/esthag/asap/html/es802697m.html?sa\\_campaign=rss/cen\\_mag/estnews/2008-10-15/es802697m](http://pubs.acs.org/cgi-bin/sample.cgi/esthag/asap/html/es802697m.html?sa_campaign=rss/cen_mag/estnews/2008-10-15/es802697m)
6. NBVC San Nicolas Island Integrated Natural Resources Plan (on CD)
7. Naval Base Ventura County, NBVC Point Mugu Integrated Natural Resources Plan (on CD)
8. Integrated Cultural and Natural Resources Plan for Construction Battalion Center NBVC Port Hueneme (on CD)
9. Urban Pesticide Pollution Prevention (UP3) Project - [http://www.up3project.org/up3\\_index.shtml](http://www.up3project.org/up3_index.shtml)

## 6 Emergency Pest Management

### 6.1 Public Health Emergencies

Pests become a public health emergency when the amount of pests increase in number and/or are found to carry human disease pathogens. A public health emergency, or potential emergency, requiring pest management action, may be indicated in several ways:

#### 6.1.1 Natural or human-related disaster

This includes earthquakes, wildfires, floods, vehicle accidents and terrorist attacks. Usually pest problems do not develop immediately after a disaster. Public health pest problems may be the result of increased amounts of refuse, collapse of local infrastructure (i.e. lack of garbage pickup), decaying human and animal bodies, and accumulation of standing water. The potential pest related consequences are vector-borne or zoonotic disease outbreaks and increased contact with rodents and feral animals that may cause injury.

#### 6.1.2 Vector-borne or zoonotic disease

- Reports of human cases – Many human cases of vector-borne and zoonotic disease identified in local medical facilities are reportable to the local health authorities in compliance with Title 17, California Code of Regulations, §2500. A report of a human case of WNV or other disease would initiate an investigation by the Ventura County Public Health Department and Vector Control Program and California Department of Public Health (CDPH). Alerts will go out to other hospitals and clinics if it appears that the cases were locally acquired. Immediate vector control may be necessary to prevent further transmission.
- Detection of infected mosquitoes or sentinel animals – Routine surveillance for mosquito-borne diseases are conducted by the Ventura County Vector Control Program. They report testing results through the public health system. This surveillance program is an early warning system that indicates when vector control should be initiated or increased to prevent human disease.

#### 6.1.3 Animal attack

Africanized Honey Bees (AHB) are of specific concern due to their aggressive defensive behavior. The local fire department is the primary responder to bee sting incidents. Fire department personnel have been trained to protect and manage bee sting victims. A stinging incident is not considered a pest control response issue, but rather, an emergency response and any and all appropriate bee control measures can be used. If fire department response is delayed installation first responders should be trained how to protect themselves and victims from bee stings.

### 6.2 Agricultural Emergencies

Agricultural emergencies are the result of the introduction of insects or other animals that can cause extensive damage to agriculture or forestry in the State. Examples of the pests are Mexican fruit fly and glassy winged sharpshooter. Military installations can be a conduit for the introduction of these pests due to the movement of military equipment and personnel in and out of the State and the Country. The military's role in preventing introduction of these pests is described in SECNAVINST 6210.2A: Quarantine Regulations of the Armed Forces. Inspections to prevent importation of pests are normally conducted at the port of debarkation in the foreign country. The California Department of Food and Agriculture (CDFA) Plant Health and Prevention Services provides oversight of the pest detection program. CDFA coordinates their program with the Ventura County Agricultural Commissioner's Office, which has a program for pest exclusion and detection. The County would issue alerts and would coordinate control in the event of an agricultural emergency.

### 6.3 Emergency Pest Management Resources

Installation PMSPs maintain pesticides and equipment to manage most emergencies. Contract PMSPs can be used for emergencies if it is written in the contract specifications. NHL has developed an Emergency Vector Control Plan (EVCP) to manage public health emergencies (Appendix J). It includes additional Navy and local government contingency vector surveillance and control resources.

### 6.4 References

- Public Health Pesticide Applicator Training Manual - <http://entnemdept.ufl.edu/fasulo/vector/manual.htm>
- AFPMB TG 24: Contingency Pest Management Guide - <http://www.afpmb.org/pubs/tims/TG24/TG24.pdf> (CD)
- AFPMB TG 43: Guide to Pest Surveillance during Contingency Operations - <http://www.afpmb.org/pubs/tims/tg43/tg43.pdf> (CD)
- Navy Environmental and Preventive Medicine Unit FIVE Public Health Pest Management - <http://www.med.navy.mil/sites/nmcsd/nepmu5/vector/default.aspx>
- SECNAVINST 6210.2A: Quarantine Regulations of the Armed Forces –
- California Department of Food and Agriculture (CDFA) Plant Health and Prevention Services <http://www.cdfa.ca.gov/phpps/>
- Western IPM Center: Pest Alerts Affecting the Western Region - <http://www.wrpmc.ucdavis.edu/alerts/index.html>
- California Department of Health Services - <http://bepreparedcalifornia.ca.gov/epo>
- California Vectorborne Disease Surveillance System - <http://www.calsurv.org/>
- California Department of Food and Agriculture Plant Health and Prevention Service - <http://www.cdfa.ca.gov/phpps/>
- Ventura County Agricultural Commissioner's Office - <http://portal.countyofventura.org/portal/page/portal/AgCommissioner>
- Ventura County Environmental Health Vector Control Program - [http://www.ventura.org/rma/envhealth/programs/tech\\_serv/vector/index.html](http://www.ventura.org/rma/envhealth/programs/tech_serv/vector/index.html)
- Ventura County Public Health Department - <http://portal.countyofventura.org/portal/page/portal/HCA/PUBLICHEALTH>

## 7 Program Resources

The NBVC has access to the following support agencies and organizations for pest management assistance. Contact information is located in Appendix L.

### 7.1 Agencies

#### 7.1.1 NAVFAC Southwest, Code EV53, San Diego, CA

NAVFAC Southwest is staffed by one full time civilian DoD applied biologist (AB) / professional pest management consultant certified in DoD pesticide applicator categories 3,5,6,7,8 and 11. The applied biologist provides the following products and services:

- Review and approve the IPMP in accordance with DoD and Navy policy;
- Provide technical assistance to the installation pest management coordinator, environmental manager, safety officer, medical officer and other regional and installation personnel regarding pest management and pesticide regulatory compliance;
- Review and approve or reject pesticides and equipment to be used on the installation;
- Conduct on-site program reviews and environmental compliance program external assessments (EA) to ensure compliance with the regulations and the IPMP;
- Compile and report actual pesticide use and pest management operations to appropriate DoD agencies;
- Provide IPM recommendations and pest identification;
- Act as NAVFAC Southwest point of contact for pesticide regulations and compliance;
- Assist installations with writing or re-writing IPMPs; and
- Provide pest management training and certification for DoD personnel.

Website:

[https://portal.navy.mil/pls/portal/url/page/ev/ev\\_southwest/ebi\\_plan/ab\\_pest\\_mgmt/abpm-welcome](https://portal.navy.mil/pls/portal/url/page/ev/ev_southwest/ebi_plan/ab_pest_mgmt/abpm-welcome) (This is on the NAVFAC intranet and is only available to NAVFAC, CNIC and USMC personnel who have an account)

#### 7.1.2 Navy Environmental and Preventive Medicine Unit FIVE (NEPMU-5), San Diego

NEPMU-5 is currently staffed by three full-time active duty U.S. Navy entomologists and one civilian entomologist. The entomologists are certified in DoD Pesticide Applicator Categories 3,5,6,7,8 and 11. The Unit's Vector Control Department provides the following products and services:

- Act as Navy Medicine (BUMED) Professional Pest Management Consultant to provide BUMED review and approval of IPMP;
- Provide technical assistance on the surveillance and control of vectors on the installation;
- Provide vector-borne disease risk assessments and disease prevention recommendations when requested;
- Provide disease vector management consultation and identification services; and
- Provide contingency pest management in the event of a disaster or disease outbreak. (See Emergency Vector Control Plan in Appendix J).

Website: <http://www.med.navy.mil/sites/nmcscd/nepmu5/Pages/index.htm>.

#### 7.1.3 Ventura County Agriculture Commissioner

Personnel from this department are the pesticide regulatory officials for the State of California. Pesticide enforcement personnel can provide information regarding State and local pesticide regulations. They are also responsible for pest exclusion and detection in the County. Website: <http://portal.countyofventura.org/portal/page/portal/AgCommissioner>.

#### 7.1.4 University of California Cooperative Extension Services

The Extension's Ventura County services include advisors on IPM, entomology and natural resources. They also provide low cost training on pest management topics. Website: <http://ceventura.ucdavis.edu/AgMenu/>.

### 7.1.5 County of Ventura Environmental Health Vector Control Program

This program is responsible for vector surveillance and control in the county. They conduct routine vector-borne disease surveillance and respond to and coordinate mosquito control measures during zoonotic or human disease outbreaks throughout the County. They also provide surveillance data to other government agencies and advice on vector management topics. Website: [http://www.ventura.org/rma/envhealth/programs/tech\\_serv/vector/index.html](http://www.ventura.org/rma/envhealth/programs/tech_serv/vector/index.html).

### 7.1.6 California Department of Public Health Vector-borne Disease Section

Public health biologists provide vector surveillance and control assistance throughout California. They are State-certified in public health pest management. They provide assistance to counties that do not have or have limited vector surveillance programs. They also cover Bureau of Land Management, Forest Service and National Park lands. Website: <http://www.cdph.ca.gov/programs/vbds/Pages/default.aspx>.

## 7.2 **Publications**

- AFPMB Technical Guides - <http://www.afpmb.org/pubs/tims/tims.htm>
- AFPMB Literature Retrieval System: use this site to search and download over 102,000 complete journal articles related to pest and vector management - [http://lrs.afpmb.org/rlgn\\_app/ar\\_login/guest/guest](http://lrs.afpmb.org/rlgn_app/ar_login/guest/guest)
- Pest Control Technology Magazine and Online: Designed for the technician, you can subscribe to the magazine, register for website access, or search the archived articles for free - <http://www.pctonline.com/>
- Pestweb: Online pest management training, FAQs, and pest articles - <https://www.pestweb.com/>.
- Ebeling, W. 1975. Urban Entomology: Online version provided by UC Riverside Department of Entomology - <http://www.entomology.ucr.edu/ebeling/index.html> San Diego County Department of Agriculture and Weights and Measures