

EXOTIC FRUIT FLY

STRATEGIC PLAN

FY 2011-2015



USDA, APHIS
Fruit Fly Exclusion and Detection
Programs
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Introduction

Mission

The Mission of APHIS's Fruit Fly Exclusion and Detection Programs (FFED) is:

To protect the health and value of American agricultural resources threatened by the establishment of exotic fruit fly populations.

Fruit flies in the family Tephritidae are among the most destructive and well-publicized pests of fruits and vegetables around the world. The genera *Anastrepha*, *Bactrocera*, and *Ceratitis* pose the greatest risk to American agriculture and are the focus of this strategic plan. Tephritid fruit flies spend their larval stages feeding and growing in more than 400 host plants. Introduction of these pest taxa into the United States causes economic losses from destruction and spoiling of host commodities by larvae, costs associated with implementing control measures, and loss of market share due to restrictions on shipment of host commodities. The extensive damage and wide host range of Tephritid fruit flies become obstacles to agricultural diversification and trade when pest fruit fly species are present.

APHIS is concerned with two main types of entry risk associated with exotic fruit flies:

- ◆ “Long-distance” risk associated with the entry into the United States of infested fruit or vegetables from fruit fly infested countries distant from our borders. This includes transiting infested fruit or vegetables entering via the Canadian border.
- ◆ The risk of the northward spread of exotic species into the United States via Mexico. Mexico is an especially high-risk pathway due to the shared border and the large numbers of people migrating from fruit fly infested areas of Central America and Mexico to the United States.

Although Mediterranean fruit fly (Medfly) and Mexican fruit fly (Mexfly) are currently the primary focus of APHIS domestic and offshore activities, *Bactrocera dorsalis* (oriental fruit fly, or OFF) and other species in this genus are serious potential threats to

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U.S. industry. In the past decade, the increase in detections of OFF in California and Florida demonstrates the potential for establishment of this pest. Three exotic species that have become established in Hawaii, *Bactrocera cucurbitae* (melon fly), *Bactrocera latifrons* (solanum fruit fly), and OFF, are a constant threat to the U.S. mainland. The olive fly, *Bactrocera oleae*, is an example of a species in this genus that has recently become established in commercial olive production and ornamental plants in California and threatens virtually all commercial and fruit-bearing ornamental olive plantings. *Bactrocera invadens* has spread rapidly through the Near East and Africa and threatens to colonize areas of the western hemisphere as other exotic pests have done over the years from these areas. In addition, *Bactrocera carambolae* (carambola fruit fly) was introduced and established in South America and is a potential threat.

Strategic Perspective: Multi-tactical pest management approaches

APHIS responds to exotic fruit fly risks with an integrated system that incorporates both domestic and off-shore surveillance activities, fruit fly control programs, interpretation of exclusion risk data to implement port of entry mitigation, and regulatory actions. This multi-tactical approach is the product of close collaboration and consultation between APHIS and its exotic fruit fly program cooperators and stakeholders.

Strategic Position: A partner with governmental and non-governmental groups

Operating the safeguarding system and maintaining its program components in proper balance requires the coordinated assistance of many government agencies and stakeholder groups. The implementation of this plan is dependent upon a fully integrated USDA partnership among APHIS International Services (IS), APHIS Plant Protection and Quarantine (PPQ), and the Agricultural Research Service (ARS). The network extends beyond USDA to include foreign plant protection organizations, other Federal agencies, for example the US Department of Homeland Security's Customs and Border Protection, State Departments of Agriculture,

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Tribal Nations, the U.S. fruit and vegetable industry, and the general public.

All APHIS fruit fly activities are cooperative in nature. APHIS has cooperative agreements and Memorandums of Understanding (MOUs) with States to:

- ◆ Conduct detection programs.
- ◆ Implement Medfly and Mexfly preventive releases and control programs.
- ◆ Share resources, and
- ◆ Jointly respond to fruit fly outbreaks.

APHIS also partners with foreign governments to implement offshore activities. Mexico and Guatemala have cooperative agreements with APHIS to implement the Moscarded Regional Program to mitigate the pest risk Medfly poses from that area. APHIS has international trust fund arrangements in several countries to fund pre-clearance certification programs that facilitate safe export of fruit fly host commodities to the United States. Roles and responsibilities are determined for each activity as dictated by legal authorities, expertise, administrative and technical strengths, and available staff, resources, and equipment.

USDA-APHIS Management and Policy

APHIS formed the Fruit Fly Program Executive Board as a policy setting and coordination group that provides Federal leadership for the exotic fruit fly safeguarding system. Continued success of this system is dependent upon distribution of resources within the safeguarding program network, according to the associated degree of risk. Based on an assessment of the current program components and anticipated fruit fly threats, the APHIS Fruit Fly Program Executive Board has identified a number of initiatives to strengthen current system components and provide additional safeguarding measures. To set proper priorities, the board envisions an ongoing dialogue among all stakeholders, with a continuous cycle of risk analysis, program reviews, and joint planning. The Board has appointed a Fruit Fly Program Director to work with regional operations managers and individual fruit fly program coordinators to implement Fruit Fly Exclusion and Detection program activities. See Figure 1.

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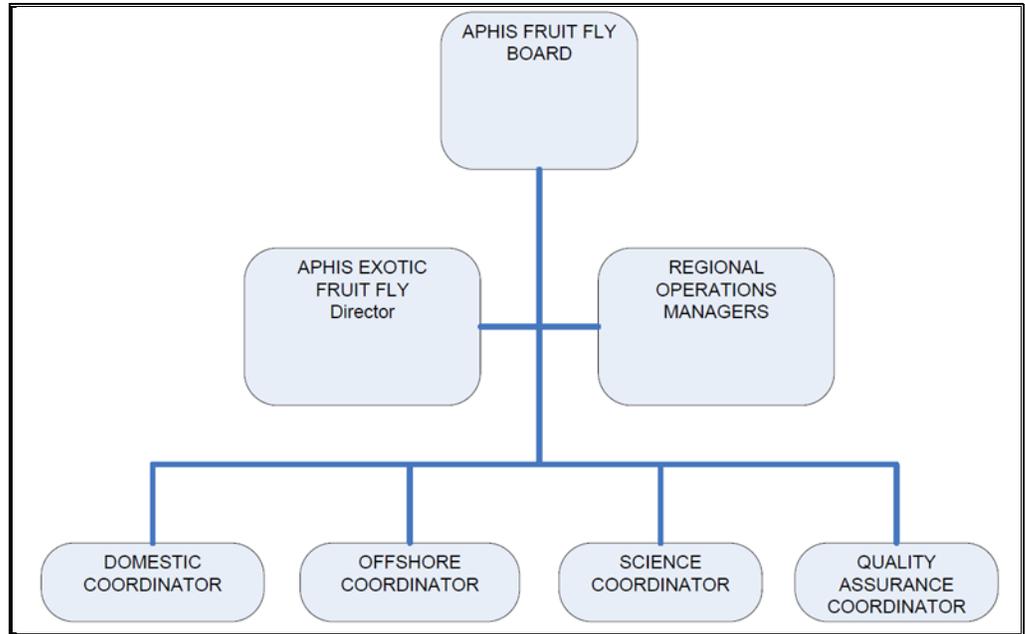


Figure 1: APHIS Fruit Fly Program Management Structure

APHIS will spend approximately \$63M from Congressional appropriations in FY 2010 to carry out our Fruit Fly Exclusion and Detection mission.

This strategic plan focuses on the FFED programs. However, there are several other federally funded activities that play a major and critical role in achieving the safeguarding mission. Congress appropriates funds to the APHIS Agricultural Quarantine Inspection (AQI) line item to support Hawaii and Puerto Rico pre-departure inspection programs. AQI user fees support regulatory and inspection activities at ports of entry. Other APHIS budget line items (AQI, Plant Methods, Pest Detection, and Biocontrol) support the APHIS Center for Plant Health Science and Technology projects. Congress also provides funds for the Agricultural Research Service to carry out exotic fruit fly research and demonstration projects. In addition, the Secretary of Agriculture may at any time authorize the transfer of emergency funds, subject to approval by the President's Office of Management and Budget, to meet emergency program needs.

Authorities and Linkages to Other Plans

APHIS's Fruit Fly Exclusion and Detection Programs carry out mission activities under the authority of the Plant Protection Act (2000) and developed this strategic plan with priorities that support both the USDA Strategic Plan (for FY 2010-2015) and the APHIS Strategic Plan (for FY 2007-2012) by supporting the following USDA Strategic goals and Management Initiatives, and, APHIS Mission and Organizational Priorities:

- ◆ **USDA Strategic Goal 4:** Ensure that All of America's Children Have Access to Safe, Nutritious, and Balanced Meals
 - ❖ **Objective 4.4** – Protect Agricultural Health by Minimizing Major Diseases and Pests to Ensure Access to Safe, Plentiful, and Nutritious Food
- ◆ **USDA Management Initiative IV:** Leverage USDA Departmental Management to Increase Performance, Efficiency, and Alignment
- ◆ **USDA Management Initiative IX:** Enhance Collaboration and Coordination on Critical Issues through Cross-cutting Department wide Initiatives
- ◆ **APHIS Mission Priority 1:** Strengthen our safeguarding system domestically and in other countries.
- ◆ **APHIS Mission Priority 2:** Strengthen Emergency Response Preparedness
- ◆ **APHIS Organizational Priority 2:** Accomplish our Mission through Effective and Efficient Management of our Programs

Program Challenges

Overview

APHIS recognizes that it is not a matter of whether we will have another fruit fly outbreak, but when. During the next five years, APHIS intends to bolster its capacity to meet this challenge and prevent establishment of exotic fruit flies by accomplishing the initiatives listed in the strategic plan. However this bolster, or even the maintenance, of the multi-tactical pest management approach is not without challenges.

First Challenge

It is critical that individual introductions be detected, evaluated, and, if necessary, eradicated as quickly as possible to prevent an introduction from becoming an established population. This is critical in urban, suburban, and environmentally sensitive areas where large-scale application of pesticides is problematic. Detection and preventive release programs are critical to stop small outbreaks from becoming established populations in high-risk areas.

Although the successful eradication of introduced fruit flies occurs each year, addressing this issue is difficult because:

- ◆ There are numerous fruit fly species of economic importance, and they approach the United States via several high-risk pathways.
- ◆ A broad range of agricultural commodities are subject to fruit fly damage.
- ◆ Previously established populations of pest fruit fly species within the United States pose a constant threat to fly-free areas.
- ◆ The origins and nature of *Ceratitis*, *Bactrocera*, and *Anastrepha* species introductions to the United States are not fully understood.
- ◆ Lures and toxicants for detection and control programs are not available for all species of concern. Existing and future lures and toxicants must comply with current environmental mandates.

Program Challenges

- ◆ Aerial applications of bait sprays are unpopular with the urban public and restricted by the manufacturer.
- ◆ The Sterile Insect Technique (SIT) is a species-specific population management tool that has been developed for a limited number of species.

Second Challenge

To reduce the likelihood of exotic fruit fly introductions into the United States, APHIS should actively participate in offshore eradication and surveillance programs that reduce the threats at their source.

Conducting offshore programs is complex and challenging because:

- ◆ Foreign governments with endemic populations of fruit flies exotic to the United States do not necessarily concur with our need to mitigate risk to U.S. agriculture.
- ◆ The illicit traffic of drugs in Mexico and Central America can impede program operations.
- ◆ Outreach efforts of program operations in Mexico and Central America must use innovative means to reach a multi-cultural population.
- ◆ Exotic fruit fly species have worldwide distribution.
- ◆ Delineating high risk pathways for introduction of pest fruit fly species requires the technology to accurately identify the introduced species and its origin. The technology to differentiate species complexes and identify potential source populations is not generally available.
- ◆ Expansion of international travel facilitates the movement of fruit fly host material and effectively increases the approach rate of exotic fruit flies to the United States.
- ◆ Fruit fly populations in Mexico and Central America are a significant threat to agriculture in the continental United States due to the large numbers of people migrating north from fruit fly infested areas.

Program Challenges

Third Challenge

Third, SIT is an essential operational tool for successful exclusion and control programs. SIT production capacity and new technologies must be available to manage target species.

Management of SIT infrastructure is challenging because:

- ◆ Sterile fly production and distribution are resource-intensive processes.
- ◆ Efficient and effective SIT implementation requires continuous cooperation and consensus within APHIS and with our domestic and foreign cooperators.
- ◆ SIT is a species-specific population management tool that is dependent upon mass production methodologies and facilities for each target fruit fly species. Several years are required to implement SIT for a new species.
- ◆ New population suppression technologies, such as mass production and release of biological control agents, must be cost-effective and fully integrated with SIT and pesticides.

Strategic Goals and Initiatives

Program Goals

- ◆ Strengthen detection and response capabilities, preventive release programs (PRPs), and, control programs to prevent exotic fruit fly populations from becoming established and/or spreading within the United States.
- ◆ Ensure Medfly does not move north of the State of Chiapas, Mexico.
- ◆ Eradicate Mexfly from Texas and northern Mexico along the Lower Rio Grande Valley (LRGV) and prevent the natural spread of Mexfly into the United States.

Program Goal 1- Strengthen detection and response capabilities, preventive release programs (PRPs), and control programs to prevent exotic fruit fly populations from becoming established and/or spreading within the United States.

The first priority is to detect and/or mitigate economically important exotic fruit fly introductions to prevent production losses and/or trade disruption to U.S. growers and industry that would result from their establishment and spread in the United States. Detection and preventive release programs (PRPs) using SIT are critical to stop small introductions from becoming established populations.

Objective 1.1 - Prevent individual exotic fruit fly introductions from becoming established populations.

To achieve this objective, we place a high priority on detecting and/or mitigating economically important exotic fruit fly introductions in time to prevent their establishment and spread in the United States.

Early detection offers the best chance to successfully eliminate new introductions before they cause production losses and/or trade disruption to U.S. growers and industry. When outbreaks are discovered early, program managers have more options for control and management that allow them to conduct emergency response operations that have less impact on the public and the

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environment. The duration of the emergency response programs are shorter and much less costly.

The current exotic fruit fly detection program is risk based. Focus is placed on urban areas and ports of entry with previous history of introductions and in States with climates conducive to establishment and with industries most impacted by fruit flies. The current detection program allows us to target most species of the genera *Anastrepha*, *Ceratitis*, and *Bactrocera*. There are a total of almost 160,000 federal and state traps arrayed across southern and western States and Puerto Rico.

In States with a history of introductions, such as California and Florida, response to an exotic fruit fly detection is swift and aggressive. Supplies are warehoused, and lines of command and communication are well established. Personnel are trained and available for immediate response to outbreaks. Since implementation of the National Response Plan and National Incident Management System, APHIS and States are rapidly transitioning to the Incident Command System to manage fruit fly outbreaks. Chemical control and SIT are the primary control technologies available for responding to outbreaks of exotic fruit flies.

PERFORMANCE MEASURE 1.1.1 — PERCENTAGE OF EXOTIC FRUIT FLY OUTBREAKS IN THE UNITED STATES THAT REQUIRE NO MORE THAN FIVE LIFECYCLES FROM OUTBREAK DETECTION TO ERADICATION.

Objective 1.2 - Maintain stable and secure sources of sterile Medfly and Mexfly in order to ensure emergency preparedness and continuation of on-going eradication and preventive release programs.

SIT is an essential operational tool for successful exclusion and eradication programs. In California and Florida where there have been historical introductions of Medfly, APHIS and State cooperators release sterile Medflies on a continuous basis in high risk areas. As a result of ongoing sterile release of Medfly, permanent facilities are placed strategically to support the use of SIT in response actions for Medfly introductions. Although it does not prevent introductions, the PRPs have reduced or, in the case of Florida, prevented Medfly establishment. Prior to implementation of the PRPs, Medfly introductions disrupted trade and industry operations on a frequent basis.

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APHIS, California's Department of Food and Agriculture (CDFA), and Florida's Department of Agriculture and Consumer Services (FDACS) maintain emergence facilities to support the existing PRPs and a ready supply of sterile Medflies to address an introduction that may occur outside the PRP release areas. Each of these facilities has the capacity to process sterile Mexflies in the case that a Mexfly population is detected in the respective state.

APHIS and CDFA partner to produce sterile male Medfly pupae for the California PRP. CDFA operates a production facility in Hawaii and APHIS supports a Medfly production facility in Guatemala. APHIS also operates a production facility for sterile Mexfly in Texas and supports production in Guatemala.

APHIS supports the operation of the El Piño sterile Medfly production facility in Guatemala. This is currently the largest sterile fruit fly production facility in the world, with a capacity of 3.5 billion sterile male pupae per week. APHIS has invested more than \$21 million in the physical plant, which was built in 1995 and renovated in 2004. Approximately 400 Guatemalan employees work at the facility, which supplies the sterile Medfly needs for several domestic control programs and the Medfly production facility in Mexico. Sterile pupae for domestic PRPs and emergency control programs in the United States receive first priority.

APHIS operates a Mexfly production facility in Edinburg, Texas to support the Lower Rio Grande Valley (LRGV) Mexfly eradication program. It is currently operating at its maximum production capacity of 150 million flies per week. In Guatemala, APHIS supported the renovation of the San Miguel Petapa (SMP) production facility to serve as a backup to the Mission plant and to serve as a source for sterile Mexflies for domestic emergency outbreaks. The plant is currently producing 30 million sterile Mexflies per week and has a capacity to produce 200 million sterile Mexflies per week. San Miguel Petapa has the capacity to serve as a backup for Medfly production.

PERFORMANCE MEASURE 1.2.1 – DETECTIONS UNDER A PREVENTIVE RELEASE PROGRAM RESULTING IN AN OUTBREAK.

Objective 1.3 - Mitigate the impact of exotic fruit flies established in portions of the United States.

Several exotic fruit fly species are established in the United States. These include: Medfly, OFF, melon fruit fly and solanum fruit fly

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in Hawaii; Caribbean fruit fly (*Anastrepha suspensa*) in Florida; Mexican fruit fly (*Anastrepha ludens*) in Hidalgo County, Texas, and olive fly (*Bactrocera oleae*) in California. Also the West Indian fruit fly (*Anastrepha obliqua*), a native to Puerto Rico and the U. S. Virgin Islands poses a pest risk to the rest of the United States.

APHIS activities focus on mitigating the impact of these species and in trade facilitation. In Hawaii, APHIS provides technical assistance through methods development and detection surveys in support of a USDA Agricultural Research Service (ARS)-sponsored suppression program. In Florida, APHIS monitors a Caribbean fruit fly management program to satisfy phytosanitary requirements of export market countries. APHIS works with CDFA and ARS to identify potential biological control agents for the olive fly. APHIS conducts pre-clearance programs for the West Indian fruit fly from Puerto Rico and for all exotic fruit flies from Hawaii. In Texas, APHIS implements a certification program to allow interstate movement of fruit from Hidalgo County, Texas.

PERFORMANCE MEASURE 1.3.1 – NUMBER OF CERTIFIED SHIPMENTS REJECTED.

Program Goal 2- Ensure Medfly does not move north of the State of Chiapas, Mexico.

The establishment of Medfly (Figure 2) in northern Mexico along the U.S. border would have a dramatic impact on our ability to protect the U.S. industry. We would expect an increase in introductions due to both natural and human-assisted movement. It is likely that even with increased detection and expanded sterile releases, repeated Medfly introductions would strain resources and disrupt markets much like the present situation in the Texas LRGV with Mexfly.



Figure 2: Mediterranean fruit fly, a worldwide agricultural pest. Photo by Scott Bauer.

Objective 2.1 – Establish and maintain Mexico free of Medfly

APHIS, in cooperation with Guatemala and Mexico, currently operates the Medfly management program, Moscamed, in the southern Mexican state of Chiapas, Guatemala and Belize. For the past 30 years, the program has successfully prevented the northern spread of Medfly closer to the United States. APHIS works closely with the Mexican government to mitigate the impact of Medfly outbreaks in Mexico. Minimizing Medfly outbreaks in the state of Chiapas reduces the risk of movement into northern Mexico and eventually, the United States.

PERFORMANCE MEASURE 2.1.1 – NUMBER OF MEDFLY OUTBREAKS IN THE MEXICAN STATE OF CHIAPAS.

Objective 2.2 – Increase the Medfly free areas in Guatemala.

Established Medfly populations in Guatemala pose two risks to Mexico and the United States: the natural spread of Medfly from the coffee belt region of Guatemala and the human assisted spread of Medfly from peach and pear production areas within Guatemala. The expansion of Medfly free areas mitigates these risks and moves operational activities into more sustainable areas.

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The cooperative program is implementing a science-based approach to barrier management named the Gradual Advance Program (GAP). This strategy utilizes GIS (geographical information system) and other risk and biological data to identify Medfly hot spots that are then targeted with environmentally acceptable chemical control and SIT releases.

PERFORMANCE MEASURE 2.2.1 – SIZE (IN SQUARE KILOMETERS) OF THE MEDFLY-FREE ZONE WITHIN THE MOSCAMED PROGRAM OPERATING AREA.

Program Goal 3- Eradicate Mexfly from Texas and northern Mexico along the Lower Rio Grande Valley (LRGV) and prevent the natural spread of Mexfly into the United States.

Mexfly (Figure 3) is endemic to Mexico and even though it has been eradicated from some states in Mexico, it still poses a threat of natural and human assisted spread into the U.S., particularly Texas and California where the movement of people and goods increases the risk of Mexfly introduction. APHIS maintains an eradication program in the LRGV and a SIT suppression program in Tijuana to mitigate this risk.

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Figure 3: Mexican fruit flies laying eggs in grapefruit before a test of the reduced-oxygen treatment. Photo by Jack Dykinga.

Objective 3.1 -- Establish and maintain Texas free of Mexfly.

Increased urbanization along the LRGV in Texas has introduced more hosts in backyards that are in proximity to commercial citrus groves. Also, periods of damaging weather and increasing costs have led to the abandonment of many smaller groves. This has resulted in increased Mexfly populations that jeopardize management programs that facilitate the movement of commercial citrus. These Mexfly populations also pose an increased risk for spread of this pest to other states.

APHIS, the Texas Department of Agriculture (TDA), and the Texas citrus industry cooperate to manage and eventually eradicate Mexfly populations present in Texas through the implementation

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of surveillance and SIT activities. The total managed area in the LRGV includes one infested and two Mexfly free counties in Texas and seven infested contiguous Mexican municipalities. The program currently suppresses and monitors the Mexfly populations in the one infested Texas county to allow the certification of shipments of citrus without treatment unless detections of fertile Mexfly exceed a regulatory threshold.

PERFORMANCE MEASURE 3.1.1 – NUMBER OF MEXFLY OUTBREAKS IN THE STATE OF TEXAS.

Objective 3.2 – Eradicate Mexfly populations in the seven Mexican municipalities within the LRGV.

Mexico and the U.S. cooperate to eradicate Mexfly from the seven Mexican municipalities of the LRGV. As part of the eradication effort, the SIT program was expanded to suppress the Mexfly population in a 25-mile band along the entire shared border of Texas and the Mexican state of Tamaulipas. Mexico provides both land and a facility in Reynosa for an emergence center and staging area. In addition to the SIT releases, APHIS monitors traps and conducts chemical control activities to progressively suppress the Mexfly populations. The LRGV program parallels a similar program in the Mexican state of Baja California (Tijuana) to prevent the natural spread of Mexfly populations into California.

PERFORMANCE MEASURE 3.2.1 – NUMBER OF MUNICIPALITIES FREE OF MEXFLY IN THE LRGV PORTION OF TAMAULIPAS, MEXICO.

Objective 3.3 – Work with the government of Mexico to establish quarantine inspection stations at strategic locations to decrease the approach rate of host material infested with Mexfly into the LRGV.

Eradication of the Mexfly in the LRGV is complicated by the threat of the high approach rate of infested material from other parts of Mexico into the seven municipalities. Recently, Mexico has committed to cooperation with the United States to eliminate Mexfly populations in northern Mexico and to create regulatory controls to prevent the movement of Mexfly. APHIS will help establish quarantine inspection stations.

PERFORMANCE MEASURE 3.3.1 – NUMBER OF NEW QUARANTINE INSPECTION STATIONS ESTABLISHED IN MEXICO.

Strategic Goals and Initiatives

Management Initiatives

- ◆ Enhance quality assurance to increase program effectiveness and efficiency.
- ◆ Utilize scientific development to improve fruit fly survey, control, and identification capabilities.
- ◆ Enhance collaboration and coordination with foreign governments and international organizations on strategic fruit fly issues of common interest.
- ◆ Identify, hire and retain individuals to address current and future gaps in skill sets and workforce capacity.
- ◆ Enhance emergency response capabilities and resource utilization.

Management Initiative 1--Enhance quality assurance to increase program effectiveness and efficiency.

To help accomplish the APHIS Strategic Fruit Fly Program goals, APHIS proposes to enhance and coordinate fruit fly quality assurance activities. The initiative focuses on quality implementation of fruit fly policies, technologies and procedures. APHIS will conduct pathway risk analyses and program reviews. Quality control is fundamental to the operation of effective and efficient operational programs. APHIS plans include:

- ◆ Complying with international standards for the production of sterile fruit flies.
- ◆ Evaluating and implementing, as appropriate, the recommendations from the recent review of the national surveillance programs and a review of the fruit fly SIT emergence and release facilities.
- ◆ Reviewing all of the sterile fruit fly production facilities used by APHIS programs.
- ◆ Establishing a schedule for the periodic review of all APHIS administrative (contracting, etc.) and program fruit fly activities.
- ◆ Collecting and better utilizing data and information to support quality assurance.

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- ◆ Assigning a quality assurance coordinator to manage the program.

Management Initiative 2--Utilize scientific development to improve fruit fly survey, control, and identification capabilities.

The APHIS fruit fly safeguarding system is dependent upon scientific research development and the transfer of technologies for the enhancement of SIT, detection, and control strategies for exotic fruit flies. The APHIS Center for Plant Health Science and Technology (CPHST) has primary responsibility for technology development and scientific guidance. APHIS plans include:

- ◆ Conducting pathway analyses to determine the source of fruit fly outbreaks in the U.S.
- ◆ Piloting various programs (e.g. suppression program for peaches and pears) to test various pathway theories.
- ◆ Developing new and improved regulatory pre- and post-harvest treatments.
- ◆ Providing support for fruit fly production and emergence operations.
- ◆ Evaluating the effectiveness of parasitoid releases in environmentally sensitive areas.
- ◆ Refining day degree models for fruit flies.
- ◆ Developing Mexfly genetic sexing strains and other new SIT technologies.
- ◆ Developing alternative control technologies, such as SIT for *Bactrocera* species and mating disruption.
- ◆ Implementing new bait stations, and similar attract and kill applications, for the control of fruit fly populations.
- ◆ Maintaining an active and effective National Trapping Committee to evaluate new detection systems.
- ◆ Developing DNA-based and morphological methods for identification and determination of origin for exotic fruit flies that threaten the U.S.
- ◆ Validating the effectiveness of fruit fly commodity treatments and systems approaches for FF host material imports and exports.

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Management Initiative 3--Enhance collaboration and coordination with foreign governments and international organizations on strategic fruit fly issues of common interest.

APHIS cooperates with and provides technical assistance to a number of foreign governments to conduct fruit fly programs. These include the governments of Mexico, Guatemala and Belize for the Moscamed program; the government of Mexico for the Mexfly programs along the Mexican border; and providing technical assistance to the Greater Caribbean Plant Health Directors. APHIS participates with international organizations, such as the International Atomic Energy Agency (IAEA), International Plant Protection Convention (IPPC), and North American Plant Protection Organization (NAPPO), to further technology development and to develop standards for fruit fly programs. APHIS plans include:

- ◆ Participating in offshore action programs to reduce the threat at its source.
- ◆ Updating international agreements with Mexico, Guatemala, and Belize to ensure long-term joint management of the fruit fly program activities.
- ◆ Continuing to work closely with the Guatemala Ministry of Agriculture to fortify field activities and continue the production of sterile flies in the El Piño facility.
- ◆ Continuing to partner with Mexico to conduct Mexfly SIT and survey activities in northern Mexico, adjacent to high risk areas along the U.S. border.
- ◆ Reducing risk of entry of exotic fruit flies, through providing technical support for fruit fly risk reduction activities worldwide.
- ◆ Supporting the U.S. - Mexico Joint Strategic Plan for Fruit Fly initiatives and activities of common interest for the two countries.

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Management Initiative 4--Identify, hire and retain individuals to address current and future gaps in skill sets and workforce capacity.

Fruit Fly Detection and Exclusion Programs present a complexity of scientific and operational activities which require a workforce composed of individuals with unique skill sets to execute and manage the programs. Maintenance of an effective workforce should include developmental managerial and technical positions to ensure the continued success of the programs. APHIS plans include:

- ◆ Developing a succession plan that addresses the attrition that will occur to the APHIS Fruit Fly management program over the next three to five years.
- ◆ Identifying key positions and fostering the development of employees who will be able to fill these key slots.
- ◆ Developing new and filling vacant taxonomic and operational support positions for fruit fly programs.
- ◆ Modifying the APHIS IS rotational process for control and eradication programs.
- ◆ Exploring alternatives to filling critical vacancies in the short term.

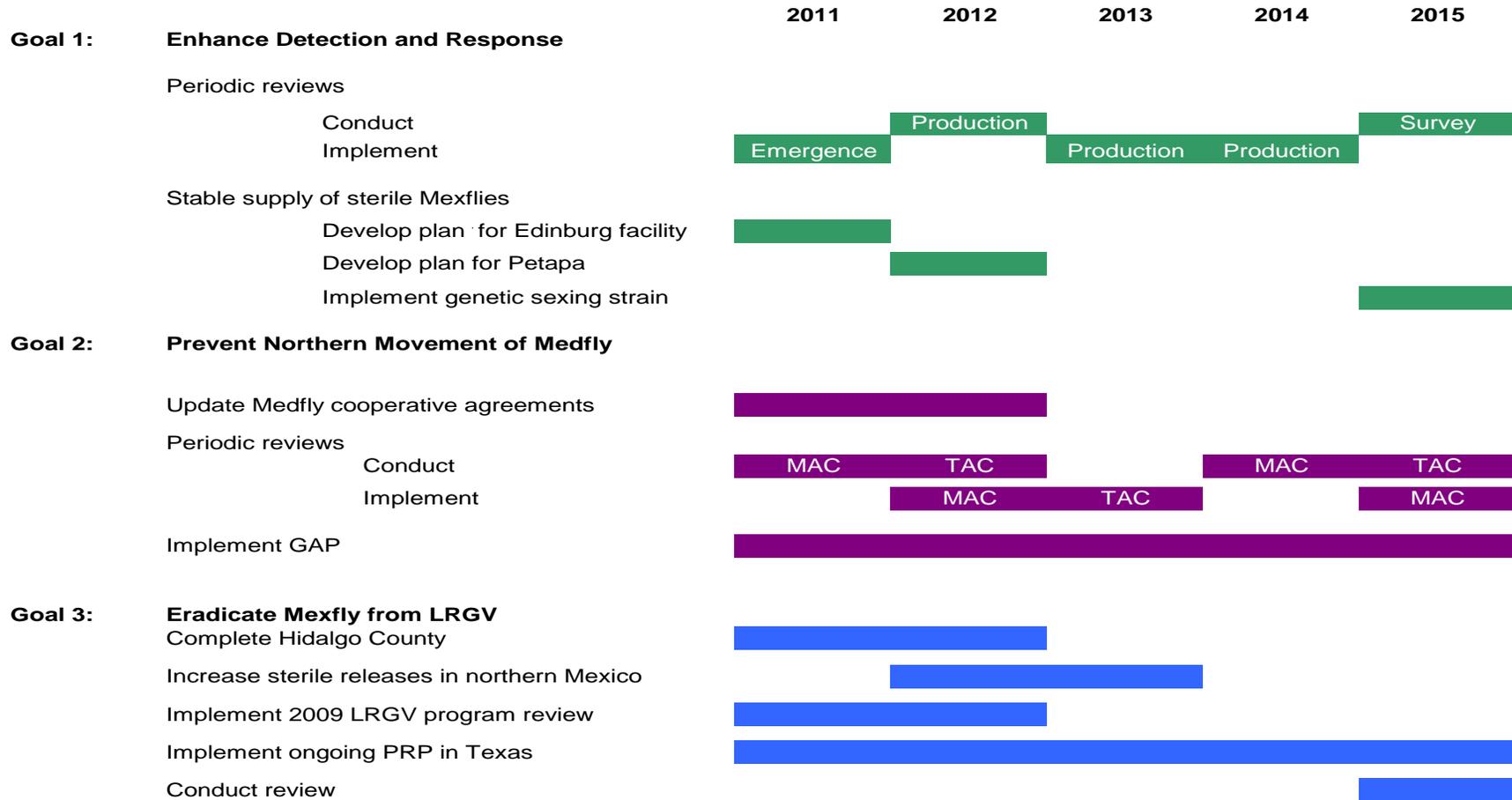
Management initiative 5--Enhance emergency response capabilities and resource utilization.

APHIS manages fruit fly emergency outbreaks every year. Providing adequate resources for these outbreaks is challenging and disrupts ongoing program activities. Contingency planning is an integral part of the APHIS emergency response mandate. APHIS plans include:

- ◆ Exploring alternative funding sources for emergency response.
- ◆ Expanding employee development for fruit fly emergency response.
- ◆ Ensuring program facilities are capable of meeting the SIT needs of emergency projects

Appendix

APHIS Exotic Fruit Fly Goals: Activity Timeline



Appendix

APHIS Exotic Fruit Fly Initiatives: Activity Timeline

