



Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

***Ceratitidis capitata* Cooperative Eradication Program**

St. Croix, Virgin Islands of the United States

Environmental Assessment, September 2026

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1 Purpose and Need for the Proposed Action

The U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) is considering actions that would assist in the eradication of *Ceratitis capitata* on St. Croix, in the U.S. Virgin Islands (USVI; officially, The Virgin Islands of the United States). Fruit flies in the *Ceratitis* genus are not native to the United States; their ongoing detection in or near U.S. ports of entry presents a risk to cultivated and naturally occurring plant hosts in the United States, and to U.S. crop production and food security. USDA’s Economic Research Service defines food security as “access by all people at all times to enough food for an active, healthy life” (USDA-ERS 2025).

The genus *Ceratitis* includes over 89 species, many of which are known or believed to have the potential to damage a diverse array of important crops (Barr and McPherson 2006). *Ceratitis* spp. of particular concern to U.S. agriculture include:

- Mediterranean fruit fly, *C. capitata* (“Medfly”)
- Mango fruit fly, *C. cosyra*
- Natal fly, *C. rosa*

APHIS conducts ongoing preventive sterile fly release programs, also termed sterile insect technique (SIT), to control Medflies that may enter the contiguous United States. The trigger for a U.S. federal *Ceratitis* spp. quarantine occurs either at confirmation of a breeding population, or when there is capture of two wild flies within a certain radius during one life cycle (trigger criteria in Table 1). For Medfly infestations, eradication and quarantine are initiated at the same time (APHIS 2020).

Table 1. Cooperative Fruit Fly Emergency Response Triggers.

Pest species	Trigger for Delimitation	Duration of Delimitation (i.e., number of generations per single fly find)	Trigger for Eradication	Trigger for Quarantine
<i>Ceratitis</i> spp.	1 fly	3 generations	2 flies within a 3-mile (4.8 km) radius during 1 life cycle	2 flies within a 3-mile (4.8 km) radius during 1 life cycle
Mated female of any genus and species of tephritid fruit fly presumed or known to be mated to a wild male; a larva or pupa	1 mated female or immature stage	3 generations	1 mated female or immature stage	1 mated female or immature stage

Source: (APHIS 2020)

Between mid-August and early September 2026 four Medflies were detected (one unmated adult female and three mature males) in traps placed in tropical almond trees growing in a residential area of Christiansted (APHIS 2026a). Confirmation of the four specimens as *C. capitata* indicated an active infestation with breeding potential. PPQ and the U.S. Virgin Islands Department of Agriculture (VIDA) therefore decided to establish a Medfly quarantine and eradication program on St. Croix.

The number, timing, and location of the Medfly detections between August and September 2026 triggered federal participation in a regulatory quarantine and pest eradication program in the USVI. APHIS and VIDA are conducting survey trapping and host inspection outward from the Christiansted Medfly detections. There is no commercial host crop production within 4.5 miles of the August and September 2026 detections (APHIS 2026a). Commercial production within the quarantine boundary may include cultivation of avocado, pepper, and mango; their fruits can serve as Medfly hosts (APHIS 2026b). APHIS lists regulated Medfly-host spp. online at <https://www.aphis.usda.gov/plant-pests-diseases/fruit-flies>.

Ceratitidis capitata is a destructive agricultural pest with the potential to adversely affect the economy in many countries. It is a continual pest threat to the United States and has a long history of being a serious pest of more than 300 different plant species, primarily temperate and subtropical fruits.¹ Medfly (*moscamed* in Spanish) is one of the world's most destructive agricultural pests, threatening more than 300 kinds of fruits, nuts, and vegetables. In the United States, Medfly could attack apples, apricots, avocados, citrus, cherries, figs, grapes, guavas, kumquats, loquats, mangoes, nectarines, papayas, peaches, pears, peppers, persimmons, plums, tomatoes, and several types of nuts, among many other crops. The female Medfly attacks ripening fruit, piercing the soft skin and laying eggs in the pulp. The eggs hatch into larvae, or maggots, that feed inside the fruit pulp. This causes the fruit to rot (APHIS 2015a).

Medfly disperses to new locations primarily via the export and local sale of fruit containing Medfly eggs or larvae (GISD 2023). Medfly was first recorded in Hawaii in 1907; by 1910, a population was established there (Thomas et al. 2022). Medfly introduction to the U.S. mainland has been intermittent since 1929 (Gasparich et al. 1997). Surveillance and eradication efforts by APHIS and cooperating States have prevented Medfly establishment on the mainland. Originating in Africa, the pest spread throughout the Mediterranean region and is now found in most tropical and subtropical areas of the world. The Christiansted outbreak is the first to trigger a federal Medfly quarantine in the USVI (S. Usnick, personal communication, 2026-09-22) but is not the first to trigger a cooperative fruit fly program in the U.S. Caribbean territories. A Medfly quarantine was triggered in Puerto Rico in May 2015 and ended with successful eradication of that infestation (APHIS 2015b, 2015c). A new Medfly quarantine was triggered in Puerto Rico in the summer of 2026; APHIS is cooperating with the Puerto Rico Department of Agriculture in eradicating the Medfly infestation (APHIS 2026c).

Medflies can produce multiple generations in a year (normally three to six but as many as 15 generations per year are reported) (Bazelet 2017). Mating occurs at any time of day. Each female

¹ The term “fruit” used in this document refers to the pollinated and ripened ovary of a flower — “fruits” are not leaves, stems, or roots. For example, tomatoes, squash and walnuts are fruits, while a carrot (a root) is not (APHIS 2025a).

on average lays 300 eggs over six months during her lifetime (APHIS 2003) but may lay up to 800 (Thomas et al. 2022). Under tropical summer weather conditions, a Medfly completes its life cycle in 21 to 30 days (APHIS 2015a) by passing through five phases:

- An adult female deposits eggs under a host fruit's skin.
- The eggs hatch and produce wormlike larvae (maggots).
- The larvae feed on the fruit's pulp before dropping to the ground, where they burrow into the soil.
- The larvae transform into pupae in the soil.
- The pupae mature into adults (flies) and emerge from the soil.

The duration of the developmental stages may be increased by lower temperatures; the type and condition of the host fruit also influence the length of the larval stage. For example, larvae require 14 to 26 days to reach maturity in a ripe lemon, as compared with 10 to 15 days in a green peach (Thomas et al. 2022). Adult Medflies can naturally disperse up to 1.5 miles when host plants are present and are capable of traversing up to 40 miles when no hosts are present (such as over open water) (CDFA 2025), which can lead to infestations outside an eradication zone.

The permanent establishment and spread of this pest in any of the United States can result in higher production and postharvest costs to safeguard commercial fruit from infestation, increased pesticide applications on production agriculture and residential properties to mitigate damage, and economic stressors and job losses from trade restrictions imposed by USDA and foreign trade partners (CDFA 2025). The ongoing establishment of Medfly in the Hawaiian Islands has reduced the yield and quality of crops such as coffee, citrus, guava and pineapple, and continues to subject Hawaii to quarantine restrictions on shipping fruit to the U.S. mainland.

Detection and eradication of Medfly infestations in the contiguous United States have historically been accomplished by survey trapping, application of pesticides, release of sterile males, fruit stripping, and prohibiting movement of untreated fruit from quarantine areas. Because VIDA authorities consider the Medfly outbreak in St. Croix a serious agricultural threat and because they cannot rely exclusively on state and local funding to control invasive fruit fly populations, they contacted APHIS. At the time this document was prepared, there were no other active fruit fly quarantines in the USVI and Puerto Rico. The most recent Medfly quarantine in the United States was removed in August 2026 after successful eradication of a Medfly infestation in portions of Alameda and Santa Clara Counties in California (roughly 3,500 miles away) (APHIS 2026d). Such quarantines are managed by cooperative fruit fly eradication programs led by APHIS and state partners like VIDA. APHIS removed the Santa Clara Medfly Quarantine in California on August 11, 2026 (APHIS 2026d).

1.1 Requestor's Goal

VIDA seeks to eradicate *Ceratitidis* spp. from the island of St. Croix. This pest presents a significant, clear, and imminent threat to the natural environment, agriculture, and economy of the region. Unless immediate action is taken, Medfly infestation may persist in the Christiansted district and disperse across the island. APHIS already prohibits or restricts the movement of many agricultural products from the USVI to the U.S. mainland due to the risk of introducing plant pests, pathogens, and diseases. At present, two fruit fly pests have established populations

on St. Croix: Caribbean fruit fly and West Indian fruit fly (both are *Anastrepha* spp.). VIDA seeks federal funding and additional resources needed to eradicate Medfly before the pest is established on St. Croix.

1.2 Agency Authority

APHIS cooperates with U.S. states and territories in implementing pest control programs that prevent the spread of exotic fruit flies to non-infested areas of the United States. The agency's authority for pest control and grower support programs is the Plant Protection Act (Title 4 of the Agricultural Risk Protection Act of 2000, 7 United States Code (USC) §§ 7701–7786). Various sections authorize operations to control insect pests (§ 7714); conduct pest detection, surveillance (§ 7721), and inspections (§ 7731); compile information, conduct enforcement investigations (§ 7732), enter into agreements (§ 7752), transfer funds (§ 7772); and to use emergency² measures to prevent the dissemination of plant pests new to, or not widely distributed throughout, the United States (§§ 7715, 7721). In particular, the Secretary of Agriculture may cooperate with state authorities or other people in the administration of programs for the improvement of plants, plant products, and biological control organisms (§ 7751(d)).

Under the authority of sections 411, 412, 414, and 434 of the Plant Protection Act, Puerto Rico and the USVI are quarantined to prevent the spread of certain dangerous insects that are established in the USVI but not widely prevalent or distributed in the United States. Species of ongoing quarantine significance include the Caribbean fruit fly, *Anastrepha suspensa* (Loew) and the West Indian fruit fly, *A. mombinpraeoptans* Sein (synonym for *A. obliqua* (Macquart)), the bean pod borer *Maruca testulalis* (Geyer), and a cactus borer, *Cactoblastis cactorum* (Berg) (7 CFR § 318.58).

In connection with an emergency in which a plant pest or noxious weed threatens any segment of the agricultural production of the United States, the Secretary may transfer from other appropriations or funds amounts as the Secretary considers necessary to be available in the emergency for the arrest, control, eradication, and prevention of the spread of the plant pest or noxious weed, and for related expenses (§ 7772(a)).

APHIS and cooperating States impose quarantine regulations to help keep Medfly from spreading through the movement of infested fruit—via trade shipments or by people unknowingly carrying infested fruit from one place to another. Federal quarantine laws regulate the interstate movement of any products that may harbor the pest. Partner States regulate the movement of these products to uninfested areas within their jurisdiction. Regulated items include all Medfly-host spp. present in the quarantined area. Open-air fruit and vegetable stand owners, mobile vendors, and other fruit handlers must sign compliance agreements with the St. Croix Medfly Program to conduct business. Under these agreements, handlers must protect host material from Medfly infestation and sell only approved fruits and vegetables. Commercial and homegrown produce may not be moved without inspection, treatment, and certification by Medfly Program officials (APHIS 2015a).

² *Emergency* under NEPA means a situation demanding immediate or urgent action, where delaying action to follow standard procedures would be contrary to the public interest, as determined by a responsible official. [7 Code of Federal Regulations (CFR) 1b.11(a)(13)]

After a comprehensive review of existing and potential action alternatives, APHIS published a programmatic environmental impact statement (PEIS) in November 2018 after analyzing its fruit fly emergency programs (APHIS 2018a). The PEIS addressed technological and scientific advances made in the 17 years since publication of APHIS' first cooperative fruit fly program environmental impact statement (APHIS 2001), and incorporates feedback received during the public comment period. This environmental assessment (EA) incorporates by reference the contents of the PEIS and its associated Record of Decision. APHIS reviews the PEIS periodically to ensure that reliance on its analysis remains valid.

This EA analyzes the environmental consequences of alternatives considered for eradication of a *Ceratitis* spp. population, and analyzes modifications proposed for the existing St. Croix Medfly Program. APHIS is making this EA available to the public and as necessary, will review the Program, update the analysis and its supporting documentation.

APHIS prepared this document to comply with the provisions of the National Environmental Policy Act of 1969 (NEPA, 42 USC §§ 4321 *et seq.*) and with USDA's NEPA implementing procedures (7 CFR Part 1b) for the purpose of evaluating the potential effects of the proposed action on the human environment.³

APHIS' human health and ecological risk assessment of fruit fly program chemical treatments (APHIS 2025b, 2018b, 2018c, 2018d, 2018e, 2018f, 2018g) discusses and comprehensively analyzes the eradication measures being considered for implementation in the potential Program area.⁴ This EA incorporates the fruit fly chemical risk assessments by reference in their entirety. (Environmental documentation for APHIS' fruit fly control programs is available online via the following links: [APHIS exotic fruit fly NEPA documents](#) and [APHIS GE control applications for plant health](#).)

APHIS and cooperating agencies communicate to interested parties the potential for implementation of a pest emergency program to affect the quality of the human environment. The public involvement process for fruit fly emergency programs typically includes notices to industry, public meetings, and door-to-door interviews with growers and residents. Further, APHIS coordinates with federal, state, territory, county, and Tribal governments and international trade partners to provide advance notice to people who may be affected by Program activities. APHIS' fruit fly program environmental documentation is available online or upon request. Where a choice of actions is possible, APHIS adjusts the local provisions of its cooperative pest control programs to reduce potentially adverse effects to affected entities and avoid conflict with local laws or requirements.

³ *Human environment* under NEPA means comprehensively the natural and physical environment and the relationship of present and future generations of Americans with that environment. *Effect or impact* under NEPA means changes to the human environment from the proposed action or action alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives. (For further definition see 7 CFR §1b.11.).

⁴ In this document, "program area" signifies everywhere inside the quarantine boundary, including eradication treatment cores and regulatory control zones.

Working cooperatively with U.S. states and territories, APHIS identifies and eradicates tephritid⁵ infestations. To date APHIS has cooperated with the California, Florida, New York, Puerto Rico, Texas, and USVI Departments of Agriculture on exotic fruit fly control programs.

⁵ *Ceratitis* spp. belong to the Tephritidae family of insects. Tephritid fruit flies cause major losses in fruit and vegetables; their economic consequences are so great that countries free of the major tephritid pests prohibit the import of fresh produce from countries where these flies are endemic. The United States has detection and emergency response programs in place to maintain a tephritid-free status (IAEA 2023).

2 Alternatives

APHIS considered these action alternatives:

1. No action
2. Quarantine and commodity certification
3. Eradication using an integrated pest management (IPM) with an adaptive control strategy that includes multiple eradication treatment options (“preferred alternative”)

The alternatives and their component methods were considered in the PEIS (APHIS 2018a) as they related to emergency eradication efforts. Under all these alternatives, trapping and host surveys for *Ceratitis* spp. would be used to measure baseline pest populations. All the alternatives would involve the use of regulatory controls and chemical pesticides to facilitate the timely elimination of the identified *Ceratitis* spp. infestation. For all three alternatives, the standard operating procedures and other design criteria⁶ would remain as described in the prior analysis. Alternatives may select pesticides from among those analyzed in the PEIS (APHIS 2018a). The preferred alternative would use pesticide eradication treatments only in certain locations based on the site-specific needs; applications would be targeted and ground based.

All pesticide usage in APHIS programs complies with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1910 as amended (7 USC Chapter 6). To fulfill obligations under this statute, APHIS ensures that a full pesticide registration (i.e., a Section 3 Registration), a special local need registration (i.e., a Section 24(c) Registration) and/or an emergency quarantine exemption (i.e., a Section 18 Exemption) are approved by the U.S. Environmental Protection Agency (USEPA) for each pesticide use pattern in fruit fly program applications.

Pesticides not part of the proposed Program may under certain conditions be registered for use by growers. For example, under FIFRA Section 24(c) Special Local Need pesticide registrations may be issued by Florida and are only applicable to that state. Section 24(c) registrations are intended to address situations where there is an existing or imminent pest problem for which no appropriate federally registered pesticide is available.

2.1 No Action

Under the no action alternative, there would be no federal efforts to eradicate *Ceratitis* spp. on St. Croix or to restrict expansion of a *Ceratitis* spp. population from an infested area of the island. Federal involvement may end, for example, if there is a change in federal regulation, loss of Program funding, or lack of sufficient resources to eradicate an invasive quarantine pest. In the absence of a federal effort, fruit fly quarantine and control would be the responsibility of VIDA, local governments, grower groups, and individuals. Expansion of the infestation would be influenced by any quarantines and controls, by the proximity of host plants, and by climatic conditions.

⁶ USDA defines “design criteria” as constraints or requirements proactively added to an action alternative to avoid or minimize adverse impacts. (For further definition see 7 CFR §1b.11.)

In cooperation with VIDA, APHIS surveys for exotic fruit flies in regions of the USVI where there are susceptible host plants and a conducive environment for fruit fly establishment. APHIS's State Survey Coordinator oversees trapping activities (C. Marzolf, personal communication, 2026-09-16). APHIS intensifies surveys in the vicinity of confirmed detections until a quarantine level of detections is reached or the immediate fruit fly threat ends.

Under the no action alternative, APHIS would not fiscally support control actions that are part of VIDA's Medfly detection program and Medfly research. (For information about VIDA's regulatory requirements for Medfly and movement of host materials, send an email message info.doa@doa.vi.gov.)

2.2 Quarantine and Commodity Certification

This alternative combines a quarantine with commodity treatment and certification, as described in 7 CFR § 301.32. Regulated commodities harvested within the quarantine area would not be allowed to move outside the quarantine boundary prior to treatment with prescribed applications and certification for movement outside the area. The locations of Medfly detection determine the quarantine boundary for a Medfly cooperative eradication program; the proposed quarantine would cover approximately 84 square miles (map in Appendix A) to restrict the movement of recognized Medfly-host spp. to non-infested areas. Commerce and transportation on St. Croix (airports, seaports, produce markets, etc.) could be affected by the proposed quarantine, as well as local cultivation of potential Medfly host crops.

Intensive quarantine enforcement activities would be necessary for areas with a large infestation. Activities could include enforcing mitigation measures for local fruit stands, mandatory baggage inspection at airports and seaports, and judicious use of road patrols and regulatory checks. Under this alternative, the interstate movement of regulated commodities would require the issuance of a limited permit contingent on commodity treatment. The grower or shipper would need to comply with specific conditions to minimize the pest risk and prevent the spread of *Ceratitis* spp.

Eradication methods that may be used under this alternative include treatment with (1) regulated chemicals, (2) cold, (3) vapor heat, and (4) irradiation. Treatments of certain produce, as a requirement for certification and shipping, would take place in APHIS-inspected and approved facilities. Program chemicals and their use would be as described in the PEIS (APHIS 2018a). Chemical treatments (further described under the Preferred Alternative) could include ground-based foliar application of spinosad⁷ bait sprays or treatment of harvested regulated commodities with a fumigant⁸ such as methyl bromide (MB).

APHIS is authorized to use the following fumigants: MB, sulfuryl fluoride, and phosphine. Fumigants must be used according to their registration labels, as required by FIFRA (7 USC § 136). A fumigant can only be used in states where it is registered for such use and can only be

⁷ Spinosad is an insecticide registered for use on agricultural crops, ornamentals, tree farms/plantations, turfgrass, home gardens, and lawns (residential use). Spinosad is a mixture of the compounds spinosyn A and spinosyn D (APHIS 2025b).

⁸ Fumigants are pesticides applied as liquid or powder, which volatilize to gas. Fumigants are usually applied beneath a tarp, in a chamber, or in another type of contained enclosure (APHIS 2018a).

used on commodities listed on the label. Sulfuryl fluoride's limited toxicity to insect eggs and potential for damaging fruit make it unsuitable for a fruit fly quarantine treatment (Zettler et al. 2001). APHIS fruit fly programs prescribe either MB or phosphine for fumigating post-harvest host commodities (APHIS 2018a).

2.3 Eradication Using an IPM Approach (Preferred Alternative)

APHIS and VIDA propose a cooperative program (i.e., the St. Croix Medfly Program) to eradicate a confirmed Medfly population on St. Croix. Eradication using an IPM approach was selected as the preferred alternative by considering biological effectiveness of control methods combined with acceptable levels of intrusion on the public, cost, and potential environmental impacts (APHIS 2001). APHIS' cooperative fruit fly eradication programs rely on surveillance, targeted chemical applications, host fruit removal and, for certain mainland Medfly programs, SIT.

The proposed quarantine boundary encompasses the island of St. Croix, minus the outer islands and cays. The quarantined area would cover approximately 84 square miles (map in Appendix A). Program areas and activities would center on confirmed *C. capitata* detection sites. APHIS and VIDA would expand surveillance, quarantine, and treatment boundaries as necessary if there are additional detections of *Ceratitidis* spp.

The proposed Program would employ materials and methods that are known to be effective against Medfly. All APHIS' cooperative programs to eradicate exotic fruit fly populations use established procedures and treatments (APHIS 2018a, 2004). The following subsections briefly review existing Program components (APHIS 2025b, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f, 2018g) and updated information.

Delimitation

Exotic fly trapping involves Program use of natural or synthetic lures to attract fruit flies to traps, sticky panels, wicks, or fiberboard squares (see Figure 1). Killing occurs either by fruit flies becoming stuck to a sticky substance, by drowning, or by being exposed to minute quantities of pesticide (APHIS 2018a).

APHIS cooperative Medfly programs use various types of traps to detect and delimit infestations and monitor post-treatment fly populations. The quarantine-triggering detections in Christiansted were made with cardboard Jackson sticky traps baited with an attractant (trimedlure). The Jackson/trimedlure trap is attractive to sexually maturing Medfly males. The St. Croix Medfly Program would deploy Jackson traps over an 81-square mile area centered on each Medfly detection site (APHIS 2026a).

As a supplement, Multilure traps would be placed in the square mile around each Medfly detection and in lesser densities beyond that core area (APHIS 2026a, 2026b, 2003). The Jackson traps would be baited with Trimedlure and the Multilure traps would be baited with a three-component attractant (APHIS 2026a). These baits serve different purposes and have distinct characteristics. Trimedlure is a male-Medfly-specific synthetic pheromone, while the three-component bait (ammonium acetate, trimethylamine, and putrescine) attracts both males and

female fruit flies. Additional trap descriptions are in Figure 1. The traps would be placed in varying densities in a grid pattern to be adjusted as new detections occur (APHIS 2026a). There are two wet-use options for baited Multilure traps: adding a 3% borate solution (1-week service schedule) or a 10% propylene glycol solution (2-week service schedule). Propylene glycol appears to preserve flies better than borax, slows evaporation, and may even enhance the attractiveness of the lures. The amount replenished depends on evaporation. Disposal of the propylene glycol solution must use a method approved by USEPA (IAEA 2003).

Trapping density may increase where needed to further delimit an infestation and to determine the efficacy of treatments. Servicing the Program traps would occur on a regular schedule for a period equal to three generations beyond the date of the last Medfly find (APHIS 2003).

As part of the ongoing surveillance inside the quarantine boundary, Program personnel inspect fruit fly host material on properties where a gravid/mated female fly is detected for possible larval infestation. If two or more flies are detected in close proximity, fruit cutting may be extended to all properties in a 200-meter radius (C. Marzolf, personal communication, 2026-09-16). Suspect *Ceratitidis* spp. are sent to a Program laboratory for further examination. Sampled fruit is disposed of as described in the PEIS (APHIS 2018a) and allowed by local government.



Figure 1. St. Croix Medfly Program detection and survey traps: Jackson trap (left photo) to be baited with Trimedlure. Multilure trap (right photo) to be baited with three component lure.

Source: (APHIS 2003)

Eradication Treatments

For many species of exotic fruit flies, there are no effective nonchemical control or eradication techniques (APHIS 2001). Other less effective techniques may not allow VIDA or APHIS to achieve eradication of the Christiansted Medfly infestation. Consequently, APHIS' eradication strategies for the St. Croix Medfly Program would rely on combinations of the following measures:

- chemical eradication treatment
- host removal
- host survey for evidence of breeding *Ceratitidis* spp.

- mass trapping to delimit the infestation and monitor post-treatment *Ceratitis* spp. populations
- sterile insect technique (SIT)
- no action
- regulatory quarantine treatment, and movement control of host materials and regulated articles

“No action” may be the only reasonable alternative for sensitive sites within a fruit fly program area. Eradication efforts would occur only along the perimeter of sensitive sites to prevent the expansion of a *Ceratitis* spp. population. APHIS considers sites sensitive when there are biological or regulatory reasons to avoid treating an area. Examples include the unavoidable presence of children, critical habitat, or threatened or endangered species (APHIS 2018a).

If evidence indicates a breeding Medfly population on a property (i.e., immature stages, mated female, or multiple adults are detected), host removal (fruit stripping) may be used in conjunction with the other treatment options. Fruit would be stripped from all host spp. growing in the known-infested property and adjacent properties. Stripped fruit must be placed in heavyweight plastic bags and removed to a landfill site for burial under at least one foot of fill (APHIS 2003). Fruit removal would occur once at the beginning of the project but may be repeated if additional Medflies are detected (C. Marzolf, personal communication, 2026-09-16).

The Program’s decision on whether to treat a new area takes into consideration when and where Medflies are discovered and also considers other APHIS and VIDA pest management programs. Confirmation of a mated female or breeding Medfly population leads to the foliar treatment of host trees and shrubs, applied as a targeted, ground-based spray to potential host plants within a minimum-200-meter radius of each fly detection site (APHIS 2003; C. Marzolf, personal communication, 2026-09-16). Program personnel use hand spray or hydraulic spray equipment. This highly localized spot spray consists of GF-120 NF Naturalyte® Fruit Fly Bait, an organic formulation of spinosad (pesticide), and protein hydrolysate (a food bait). Protein hydrolysate is a common food bait used in fruit fly treatments, increasing the efficacy of chemical applications, and reducing the area of pesticide treatments needed for control (Prokopy et al. 1992). Attraction to the protein hydrolysate (which can be derived from plants or yeast), gives pest fruit flies a lethal exposure to the pesticide that is mixed with the attractant. Following treatment, completion notices are left with property owners and occupants detailing precautions to take and postharvest intervals applicable to any fruit on the property. The St. Croix Medfly Program would repeat treatments every one to two weeks for one life cycle of the fly (typically 21-30 days, depending on local temperatures) (APHIS 2015a).

APHIS recognizes that, in areas receiving repeated treatments with only the insecticide spinosad, there may be development of chemical resistance in surviving fruit fly populations (Guillem-Amat et al. 2020; El-Gendy 2018; Kakani et al. 2010; Hsu and Feng 2006). While spinosad resistance has not yet become widespread in Medfly wild populations, alternating spinosad treatments with treatments containing a different insecticide may become necessary to eradicate resistant fly populations. Spinosad resistance has occurred under laboratory conditions and exists in wild fruit fly populations in the State of Hawaii (Hsu et al. 2021). Spinosad tolerance rather

than resistance was demonstrated in wild olive flies (*Bactrocera oleae*) in California.⁹ In Spain, Medfly has demonstrated resistance to malathion and lambda-cyhalothrin insecticides; researchers there discovered spinosad-resistant alleles in field populations of Medflies (Guillem-Amat et al. 2020). At the time this document was reviewed, APHIS had no evidence of *Ceratitis* spp. resistance to their spinosad treatment programs (C. Marzolf, personal communication, 2026-09-16). *Ceratitis* spp. are transient populations in the United States; continual application of spinosad is unnecessary, reducing the potential for acquired resistance.

SIT is a species-specific population management tool that requires mass production of target fly species in large facilities. Currently APHIS uses SIT to reduce or mitigate New World Screwworm and certain exotic fruit fly populations, through the intentional release of sterile flies into the environment. The sterile male flies mate with female flies to produce only infertile eggs. APHIS cooperative Medfly programs employ aircraft or ground vehicles to release hundreds of thousands of sterile flies per square mile continuously in parts of California and Florida determined to have higher risk of Medfly incursions as well as to support eradication efforts when there are Medfly outbreaks in these states. The frequent release of sterile insects in sufficient numbers causes the wild population to decline and eventually become eradicated (APHIS 2018a). Temporarily incomplete SIT coverage over fruit fly program areas may occur for reasons such as vehicle or equipment breakdowns, no-fly zones over public events, high wind conditions, poor visibility due to weather or pollution, traffic congestion, insufficient or dangerous means of access, staff shortages, and poor sterile insect quality.

APHIS is effectively using ground release of sterile Medflies in the San Juan Medfly Program (Puerto Rico) and would consider SIT for use on St. Croix (C. Marzolf, personal communication, 2026-09-16). APHIS would target a release rate of at least 250,000 sterile males per square mile every week in the Program area. Program personnel in ground vehicles restricted to existing roadways and parking areas would transport and release the sterile flies. This release strategy will continue for at least two Medfly life cycles (depending on degree day calculations) after the last sighting of a Medfly (S. Usnick, personal communication, 2026-09-22). Trap numbers would be reduced in the release zone during SIT, then increased to monitor for Medfly after SIT ends (C. Marzolf, personal communication, 2026-09-16).

- APHIS personnel would travel by small island hopper seaplanes between the Puerto Rico and St. Croix airports. If the St. Croix Medfly Program needed to use SIT, sterile *C. capitata* in screened rearing containers would be sent from the agency's fruit fly eclosure facility in Puerto Rico to St. Croix for ground release (S. Usnick, personal communication, 2026-09-22). If the Medfly outbreak on St. Croix grew in size, APHIS would consider moving eclosure operations to St. Croix to facilitate SIT (C. Marzolf, personal communication, 2026-09-17).

Intensive trapping to delimit an infestation is triggered after a single Medfly is detected. Following confirmation of the specimen, trap densities are increased in the core square-mile area surrounding the detection. Traps in the core area around the detection (0.5-mile radius) are serviced every day for seven days. In the eight square miles around the core area, traps are

⁹ From a single fly detected in 1998, the olive fly spread to all olive growing areas of California by 2009, threatening both commercial and fruit-bearing ornamental olive plantings (Zalom et al. 2009).

serviced every two days during the first week. All traps are then serviced weekly for three Medfly life cycles beyond the last fly detected (APHIS 2003).

To prevent the spread of fruit flies via infested fruits and vegetables, APHIS routinely urges people never to move any fresh produce from any property under quarantine. Public outreach is done using local media and other forms of communication. Fruits and vegetables may only move outside the quarantine after they are processed (i.e., juiced, frozen, cooked, etc.) or have completed an APHIS-approved treatment and with proper regulatory approval. APHIS does not provide guidance on issues that may vary locally, such as methods for disposing of trap materials and pesticides. USVI's own guidelines and protocol govern procedures for handling pesticide-exposed fruit.

Establishment of the quarantine boundary would ensure any host material that leaves the Program area is free from infestation by Medfly. Harvested regulated materials may be treated in enclosed areas or sealed containers according to the prescribed cold temperature, vapor heat, irradiation, or pesticide fumigant schedule for Medfly; APHIS does not fund or perform these treatments (APHIS 2018a, 2004). Harvested fruit may be moved out of the quarantined area to enclosed facilities for packing, under a temporary certificate and only after the fruit receives a Program-approved treatment on the premise. Additional Medfly detections may result in further expansion of the St. Croix Medfly Program area. If a *Ceratitis* spp. quarantine spreads to federally protected sites or Tribal lands, then Program treatments would be modified to meet the needs of those areas.

APHIS prefers the use of cold treatment to MB fumigation because of the environmental concerns associated with MB and the sensitivity of some commodities to MB. APHIS has not used MB in its fruit fly programs since 2013. However, it remains possible that APHIS could use MB fumigation to treat regulated commodities at a later date (APHIS 2018a).

In the United States, MB fumigation of federally regulated host commodities is typically performed inside a sealed container or facility. APHIS has treatment schedules for MB fumigation (by itself or paired with a cold treatment) of host commodities (APHIS 2023a). After fumigation of the potentially infested commodity under a tarp, or in a container, chamber, or facility, the remaining MB gas is vented to the atmosphere (APHIS 2018a).

Before eradication actions begin, Program officials inform the general public and potentially affected industries via press releases, meetings, and other forms of communication appropriate for the recipients. APHIS notifies foreign trading partners as it identifies exotic fruit fly outbreaks. Notification of residents whose property would be treated, or whose fruit must be removed, occurs at least 48 hours in advance of treatment or fruit removal. If the homeowner grants permission on site during the initial visit, these actions may be taken immediately (C. Marzolf, personal communication, 2026-09-16). Given the potential for effects to commercial production, property owners, grove operations, packing sheds, nurseries, vendors, and industry operations handling host material would be notified of quarantine locations and treatment scheduled in their area.

Areas placed under regulations may be removed from quarantine requirements after the pest has been declared eradicated. Program management would identify areas to be removed when the equivalent of three life cycles of the Medfly is completed after the last specimen recovery in a quarantined area. One Medfly life cycle must have elapsed since the cessation of control activities. APHIS must publish a notice when areas are removed from (or placed under) federal quarantine requirements (APHIS 2003).

3 The Affected Environment and Potential Environmental Consequences

NEPA requires federal agencies to assess the potential effects of their proposed actions on the human environment prior to making decisions. This chapter analyzes the potential environmental consequences of alternatives considered for a program of *Ceratitis capitata* control and eradication. APHIS proposes to prevent the artificial spread of a serious insect pest in the United States, which is a mandated statutory goal. Preventing the spread of the Christiansted Medfly infestation would protect St. Croix's agricultural industry and natural environment, as well as safeguard non-infested areas of the USVI and elsewhere in the United States. Potentially sensitive sites would be accommodated through the selection of eradication methods and other design criteria.

For the purposes of this analysis, APHIS considers the potential Program area to include the entire island of St. Croix (maps in Figure 2 and Appendix A). St. Croix is part of the USVI and is located in the Caribbean Sea around 65 miles southeast of Puerto Rico and approximately 1,100 miles from the Florida coast. The USVI territory consists of the main islands of Saint Croix, Saint John, and Saint Thomas plus 50 surrounding minor islands and cays. St. Croix is one of two USVI administrative districts or "counties" (the other being St. Thomas/St. John). The territory is governed as a whole. St. Croix is the largest island in the territory.



Figure 2. Island of St. Croix (the potentially affected environment).

Source: <https://www.stcroixtourism.com/maps.htm>

APHIS considered the site-specific characteristics of the area with respect to the way implementation of the action alternatives might affect the human environment. In accordance with USDA's NEPA implementing procedures at 7 CFR §1b.2(f)(3)(ii), APHIS considered the potentially affected environment¹⁰ in terms of the following:

- Both short- and long-term effects.
- Both beneficial and adverse effects.
- Effects on public health and safety.
- Economic effects.
- Effects on the quality of life of the American people.

3.1 Affected Environment

This section briefly discusses pertinent physical and demographic features in the potential program area for the St. Croix Medfly Program. The background information provides context for specific Program areas as they arise.

Residents and Land Resources

St. Croix has an area of approximately 84 square miles (maps in Appendix A). The island has a tropical savannah climate (average daytime temperature 80 °F) and diverse land and marine ecosystems. Island vegetation ranges from dry cacti in the east to lush rainforest in the west (Gotostcroix.com 2026). In the west rolling hills run parallel to the coast, culminating in Mount Eagle (altitude 1,088 feet) and Blue Mountain (altitude 1,096 feet). St. Croix is the largest of the U.S. Virgin Islands and the only one with an extensive plain, most of which is cultivated. Tourism is the primary industry (Encyclopædia Britannica 2025). The Henry E. Rohlsen International Airport serves St. Croix with flights from the U.S. mainland, Puerto Rico, and the Eastern Caribbean. Seaplanes also fly to the island, landing at Christiansted Harbor Seaplane Base (Kiddle.co 2025).

St. Croix is divided into nine areas called subdistricts: Anna's Hope Village, Christiansted, East End, Frederiksted, Northcentral, Northwest, Sion Farm, Southcentral, and Southwest. Languages spoken on the island include English, Spanish, a variety of creoles, and Arabic (Kiddle.co 2025). The island has two main towns, Christiansted on the north coast and Frederiksted on the west coast.

St. Croix is known for its beaches, recreational activities, dining, resorts, casinos, and parkland, as well as its unique arts, crafts, music, festivals, and other cultural events. Notable attractions and protected areas include the 700-acre underwater Buck Island National Monument, Salt River Bay National Historical Park and Ecological Preserve, Sandy Point National Wildlife Refuge, St. George Village Botanical Garden, Christiansted National Historic Site, Frederiksted Pier, Estate Mt. Washington, Danish Whim Plantation Museum, rum distilleries, and the Carambola Golf Club (USVIEDA 2026; additional data sources in Appendix B). The island was home to Taino, Arawak, and Carib indigenous peoples (Gotostcroix.com 2026).

¹⁰ *Potentially affected environment* means the condition of the physical, biological, social, and economic factors that may be impacted by an action. [7 CFR 1b.2(f)(3)(i)]

Christiansted, on the northeastern coast of the island, is the largest town in St. Croix and part of the Christiansted Subdistrict. The town is closer to South America than to any part of the continental United States (see Appendix C). Exports are mainly watches and rum. It was formerly the capital of the Danish West Indies and was a boyhood residence of the early American statesman Alexander Hamilton (Encyclopædia Britannica 2023). The town is known for its well-preserved historic buildings, including Danish Neo-classical, Renaissance Revival, and Danish West Indian Vernacular structures. The Christiansted National Historic Site is a seven-acre U.S. National Park Service area downtown. The St. Croix Archaeology Museum features artifacts from pre-Colombian Native Americans who lived on the island before the Danes, English, French, and enslaved Africans occupied the area. Christiansted was designated a Preserve America Community in November 2008 (ACHP 2026).

The USVI saw the steepest population decline of all U.S. territories between census years 2010 and 2020: 18.1%. The population of St. Croix was 41,004 as of 2020: a 19.0% decline from 2010. The population of the Christiansted Subdistrict decreased 28.9% between 2010 and 2020: from 2,626 to 1,866. The town of Christiansted’s population dropped in the same period from 2,433 to 1,770 (down 27.3%) (USCB 2021). Possible factors for these declines include hurricanes and business closures. Shrinking numbers have consequences for the USVI, since federal grants and other funding are routinely based on the population (Akin 2021).

Agriculture helps the St. Croix economy. Locally produced foods and farms are featured in island-wide festivals (Kiddle.co 2025). The island sponsors farmers market days and hosts a major annual “AgriFest” (officially, the Agriculture and Food Fair of the U.S. Virgin Islands) that welcomes an average of 30,000 visitors over Presidents Day weekend to experience local farming, cuisine, and culture (Stokes 2025). The 2022 Census of Agriculture reports 455 farms on St. Croix (USDA-NASS 2025). Agricultural operations include a mix of crop production and livestock, with many farms small in size. Recent agricultural statistics for St. Croix are summarized in Table 3.

Table 3. Agricultural Statistics for St. Croix, USVI.

Indicator (St. Croix)	Value	Notes
Number of farms	455	All farm types (territory/island data).
Land in farms	6,575 acres	Includes cropland, pasture/rangeland, and other farmland.
Cropland	2,111 acres	Includes harvested cropland and other cropland.
Harvested cropland	1,311 acres	Acres harvested (all crops).
Pastureland and rangeland	3,814 acres	Includes grazed woodland and other grazing land.
Fruit and nut sales	\$379,372	218 farms with fruit/nut production for sale.
Vegetable sales	\$792,467	156 farms with vegetable production for sale.
Field and forage crop sales	\$53,313	43 farms with field/forage crops for sale.

Source: (USDA-NASS 2025)

Row crops grown on St. Croix and harvested for sale include cabbage, carrots, celery, cucumbers, eggplant, green beans, herbs, lettuce, okra, onions/chives/scallions, peppers, pumpkins, sorrel, spinach, squash, sweet corn, tomatoes, watermelons, and other vegetables. Tree crops grown on St. Croix and harvested for sale include avocados, bananas, breadfruit, coconuts, grapefruit, lemons, limes, mangoes, oranges, papayas, pineapples, plantains, and other fruits and nuts (USDA-NASS 2025). Many of these plant spp. are potential Medfly hosts and represent pathways for Medfly infestation and spread. Commercial production of potential host crops does not occur within 4.5 miles of the August and September 2026 Medfly detections (APHIS 2026a); within the quarantine boundary there may be avocado, pepper, mango (APHIS 2026b) and other Medfly-host spp. cultivation. The location and timing of Medfly detections determine the quarantine boundary for the St. Croix Medfly Program; the quarantine area might expand if additional Medflies are detected (proposed quarantine map in Appendix A).

The proposed Program area contains developed space (including a marina/resort corridor) alongside conservation lands with restricted access and formal management protocols. The quarantine-triggering Medfly detections were made on residential property (APHIS 2026a). The proposed treatment core (a 1.5-mile radius around each Medfly detection) includes residential neighborhoods, commercial areas, tourism-related facilities along the island’s north shore, and small gardens. Apart from other islands in the USVI, the nearest U.S. possessions to the treatment core are the Commonwealth of Puerto Rico and the State of Florida (see Table 4).

Table 4. Nearest U.S. possessions outside the USVI.

Destination	Distance from treatment-area edge
Florida-coastline	1,124 miles
Puerto Rico-main island	63 miles
Puerto Rico-Vieques Island	42 miles
Puerto Rico-Culebra Island	49 miles
Puerto Rico-San Juan	97 miles

Source: See Appendix B for geospatial data source.

The road network in the proposed Program area includes a main arterial that connects Christiansted, Frederiksted, and the Henry E. Rohlsen Airport (Route 66) as well as major roads that connect the island’s interior (Routes 70 and 72) and wind along the coast (Route 80). Table 5 shows the proximity of the St. Croix Medfly Program area to land sites of potential concern.

Table 5. Select Land Sites in Relation to the Proposed Medfly Program Area.

Designated Land Use	Site	Location
Nearest International Neighbor	- British Virgin Islands, 62 miles northeast. - Venezuela, 600 miles south.	The island of St. Croix lies in international maritime waters.
Certified Organic Production; Certified Farmers Markets	- No organic operations. 2 farmers markets.	In Medfly treatment core

Designated Land Use	Site	Location
Local, State, and Federal Lands	- Burning Bush Center, Estate Richmond - Christiansted Beach Front, Estate Richmond - Christiansted National Historic Site - Estate Little Princess Nature Preserve - La Grande Princesse Park - National Park Service Property - Salt River Bay National Historical Park and Ecological Preserve	In Medfly treatment core
Federally Recognized Tribal Land	None.	The island of St. Croix
Schools, Public and Private	Juanita Gardine Elementary School	In Medfly treatment core
Cemeteries; National Register of Historic Places (NRHP) Property	6 NRHP properties/historic district - No cemeteries	In Medfly treatment core
	45 NRHP properties/historic districts ~26 cemeteries/burial grounds	The island of St. Croix
Airports and Seaports	- Benjamín Rivera Noriega Airport - Puerto Rico (52.1 miles) - Charlotte Amalie Harbor Seaplane Base - St. Thomas (40.8 miles) - Christiansted Harbor Seaplane Base - St. Croix USVI (~0.1 mile) - Christiansted Harbor, Gallows Bay Marine Facility - St. Croix USVI (0.4 mile) - Cruz Bay, Enighed Pond, Theovald Eric Moorehead Dock and Terminal - St. John USVI (37.9 miles) - Cyril E. King Airport - St. Thomas USVI (41.4 miles) - Frederiksted, Ann E. Abramson Marine Facility - St. Croix USVI (9.1 miles) - Henry E. Rohlsen Airport - St. Croix USVI (4.3 miles) - Krause Lagoon cargo-port area, Wilfred "Bomba" Allick Port, Gordon A. Finch Molasses Pier - St. Croix USVI (~2.7 miles) - Limetree Bay, Ocean Point Terminals - St. Croix USVI (~2.4 miles) - Terrance B. Lettsome International Airport - Beef Island, British Virgin Islands (47.2 miles) - Virgin Gorda Airport/Taddy Bay Airport - Virgin Gorda, British Virgin Islands (49.7 miles)	Outside Medfly treatment core

Sources: (Findagrave.com 2026); Appendix B for geospatial data source.

Water Resources

The USVI are located in the Caribbean Sea and the North Atlantic Ocean, southeast of Puerto Rico. St. Croix is surrounded by the Caribbean Sea. Rainfall there is most likely around November; extreme rain events are possible during hurricane season (June through November). Although rainfall averages 50 inches per year, potable water is scarce (Gotostcroix.com 2026).

The St. Croix Medfly Program area gets its water mainly from desalination of seawater. A major portion of the population relies on rainwater collected in cisterns. Some areas of the island can access groundwater via wells. Water trucks carry water for sale to customers. Annual precipitation in the region is expected to decrease in future, which may result in water scarcity and have negative impacts on agriculture and local communities. In addition to increased drought periods in the region there is an increased risk of intense precipitation events (that exceed 3 inches) (University of the Virgin Islands 2026).

The proposed areas for Medfly eradication treatment contain about 2,491 acres of two types of wetlands: Estuarine and Marine Deepwater and Riverine (see Appendix B for geospatial data source). Table 6 provides information about additional water resources of potential concern.

Groundwater and surface water resources in the proposed Program area may be affected by weather events, such as drought and hurricanes. Despite recent rainfall, groundwater on St. Croix remains severely depleted. Groundwater depth measurements are substantially lower than they were a year ago. As a result, St. Croix continues to experience extreme drought conditions (NDMC 2026a). The proposed St. Croix Medfly Program calls for highly localized chemical applications in designated properties, and no-treatment buffers around all sensitive areas, including all waterbodies. This method of application is designed to minimize the potential for the introduction of Program chemicals to local water resources.

Table 6. Water Resources in Relation to the Proposed Medfly Program Area.

Type of Resource	Name or How Many	Location
Impaired Waters	• Christiansted Harbor • Long Reef Backreef, west • Long Reef Forereef, east • Princess subwatershed, offshore • Salt River Lagoon, Sugar Bay • St. Croix-By-the-Sea	In Medfly treatment core
Watersheds	• Christiansted Harbor-Caribbean Sea • Northcentral St. Croix • Northeastern St. Croix • Southcentral-east St. Croix	In Medfly treatment core
Major Waterbodies, Rivers, and Streams	• Caribbean Sea • Christiansted Harbor • 12 unnamed rivers and streams	In Medfly treatment core

Source: See Appendix B for geospatial data source.

APHIS considers recurring drought to be a possible influence on the St. Croix Medfly Program’s affected environment, especially in terms of available water resources. Despite the surrounding Caribbean Sea, drought may have short-term and long-term effects on St. Croix (see current and historical data for the region in Figure 3 and Table 7). APHIS’ fruit fly control program activities are designed to have minimal to no effect on water supply and water quality.

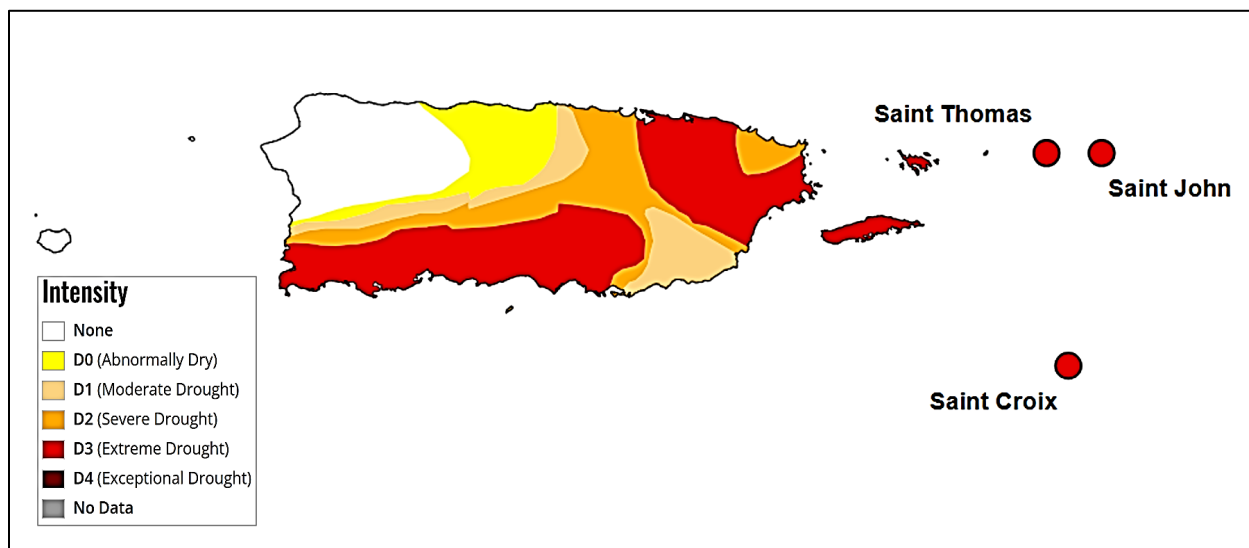


Figure 3. Drought levels in U.S. Caribbean territories: September 8, 2026.

Source: (NDMC 2026a)

Table 7. Drought in the U.S. Virgin Islands between 2020 and 2023.

Drought Intensity	Year	Weeks	Affected Sectors	Observed impacts
D2	2023	7	Relief, Response & Restrictions Water Supply & Quality	Water conservation urged in Virgin Islands
D4	2023	19	Relief, Response & Restrictions Water Supply & Quality	Water conservation urged in Virgin Islands
D2	2022	79	Agriculture Business & Industry Plants & Wildlife Water Supply & Quality	Low rainfall stressed vegetation, depleted ponds, wells in Virgin Islands
D3	2022	14	Agriculture Business & Industry Plants & Wildlife Water Supply & Quality	Low rainfall stressed vegetation, depleted ponds, wells in Virgin Islands
D2	2022	4	Fire Relief, Response & Restrictions	Burn ban for Virgin Islands
D3	2022	69	Fire Relief, Response & Restrictions	Burn ban for Virgin Islands
D1	2021	4	Fire Relief, Response & Restrictions	Burn ban for Virgin Islands

Drought Intensity	Year	Weeks	Affected Sectors	Observed impacts
D0	2020	<1	Agriculture Tourism & Recreation Water Supply & Quality	Extra irrigation water for crops and livestock on St. Croix
D0	2020	<1	Agriculture Plants & Wildlife Water Supply & Quality	Drought damaging crops, depleting water supplies in Virgin Islands
D1	2020	11	Agriculture Plants & Wildlife Water Supply & Quality	Drought damaging crops, depleting water supplies in Virgin Islands
D2	2020	5	Agriculture Plants & Wildlife Water Supply & Quality	Scarce grass, low water supplies for livestock on St. Croix
D2	2020	5	Business & Industry Society & Public Health Water Supply & Quality	High demand for water deliveries on St. Thomas

Source: (NDMC 2026b)

3.2 Potential Effects Associated with the No-Action Alternative

Under the no action alternative, uncoordinated or insufficient eradication efforts could result in the survival and establishment of *Ceratitis* spp. within a territory of the United States. If there are established Medfly populations APHIS expects substantial economic impacts on U.S. growers, processors, shippers, and consumers. Medfly feeding damages fruit and reduces harvestable yield, resulting in higher costs for production and purchase. Consumer prices would go up and fresh produce would become less available. Also, pesticide use would increase in backyard gardens and commercial farms. Other impacts would include damage to the economy from export sanctions, lost markets, treatment costs, reduced crop yields, and premature fruit drop (APHIS 2015a).

Tephritid fruit flies can attack over 400 different types of plants in the United States, destroying entire crops, disrupting trade, and causing major financial losses for affected producers and industries. *Ceratitis* spp. fruit flies pose a significant threat to U.S. agricultural production if left unchecked and allowed to spread. APHIS' fruit fly exclusion and detection programs protect the health and value of agricultural resources important to U.S. food security. APHIS manages SIT programs (targeting *C. capitata* and *A. ludens*) in susceptible areas of California, Florida, and Texas, and sponsors foreign programs to lower the risk of exotic fruit flies entering the United States. The absence of these preventive programs would result in larger non-native tephritid populations on the mainland and increase the risk of territorial incursions, potentially destabilizing agricultural trade and depleting host plant spp. in affected U.S. regions. Without federal support the Christiansted Medfly infestation is unlikely to be eradicated, and its impact is likely to be severe (APHIS 2025a):

- The infestation would spread beyond the initial infested crop, and beyond the immediate area of infestation, impacting all aspects of the agricultural economy.

- Backyard or dooryard host fruits would be unfit to eat.
- More pesticides would be used, harming beneficial insects and non-target species, such as bees, birds, and fish.

Lack of federal action would place the burden of fruit fly control on the USVI government and members of the agricultural industry. While VIDA is likely to retain surveillance and trapping activities, local farmers are likely to increase pesticide use to protect their crops. Commercial producers may experience a reduced capability to comply with organic crop production practices. The likelihood of potential pesticide effects on consumers would increase. Indiscriminate use of pesticide to protect host plants would risk faster development of pesticide resistance in *Ceratitis* spp. Medfly populations would continue to increase and disseminate until achieving an environmental equilibrium with host availability.

3.3 Potential Effects Associated with the Quarantine and Commodity Certification Alternative

This alternative would reduce the human-mediated movement of *Ceratitis* spp. by preventing the transportation of uninspected host plant materials beyond the quarantine boundary. Under this alternative, APHIS expects resident pest populations would persist within the quarantine boundary. A persistent infestation threatens the survival of host-plant species on St. Croix and may lead to fruit fly populations with increased resistance to pesticides. Any failure in quarantine actions could lead to *Ceratitis* spp. establishment outside quarantine boundaries via natural spread or human-assisted transport. In response, new or expanded quarantine areas would be needed to contain pest populations. Ongoing surveillance outside of quarantine areas would be needed to identify and respond to natural spread.

In 2024, the number of visitors to the U.S. Virgin Islands rose by 8.9% to a total of 2.6 million (USVIBER 2024). St. Croix is a hub for agritourism¹¹ offering internships, farm visits, farm-to-table dining, and eco-tours. The island's growing agritourism industry could be adversely affected if businesses rely on Medfly-host spp. produced inside the quarantine boundary.

APHIS expects there would be adverse effects to the USVI agriculture and economy from an ongoing exotic fruit fly infestation on St. Croix. Commodity certification requirements would create a necessary additional layer of governmental presence in the marketplace. This situation could create inspection jobs; however, trade would be restricted until the produce was inspected and certified for sale. Infested crops would be destroyed, reducing the volume of marketable fruit. Crop loss due to uncontrolled fruit fly populations is likely to lead to commodity scarcity and higher costs for U.S. consumers. A persistent *Ceratitis capitata* population that is not under an official control program is likely to jeopardize U.S. trade relations. The implementation of this alternative is likely to increase the marketing and transportation costs passed to consumers.

¹¹ Agritourism: commercial, recreational, or educational enterprises that link agricultural production and/or processing with tourism on a farm or other agricultural business site for the purpose of entertaining and/or educating visitors while generating income for the farmer, rancher, or business owner (University of Arkansas 2026).

3.4 Potential Effects Associated with the Preferred Alternative

This section considers potential effects to the human environment that are associated with implementation of Alternative 3, the preferred alternative discussed in Chapter 2. Potential aggregate impacts are discussed in Subsection 3.4.5 of this chapter. APHIS considered the site-specific characteristics of the St. Croix Medfly Program area with respect to the way implementation of the preferred alternative might affect environmental quality, human health, and nontarget species (including threatened and endangered species). This section also summarizes APHIS' findings on the potential effects associated with the eradication measures under the preferred alternative. Potentially sensitive sites are accommodated through the selection of eradication methods and other Program design criteria.

Eradication using an IPM approach is the preferred alternative that would employ any or a combination of the following measures:

- chemical control
- host removal
- host survey
- mass trapping to delimit and monitor Medfly presence
- no action
- regulatory treatments and movement control
- SIT

No Action is an option at sensitive sites where other components of the integrated management system cannot be accommodated. Sensitive sites are locations where unique features of the site could lead to significant environmental effects. Eradication of Medfly from sensitive sites would be difficult, requiring ongoing commitments of personnel and resources to contain the infestation within site boundaries. Failure to contain these pests would likely lead to the Medfly population's expansion into previously non-infested areas of St. Croix and nearby islands.

Quarantine and commodity certification help to restrict the spread of exotic fruit flies; however, targeted fruit fly populations may become established within the quarantine boundary. The quarantine actions are expected to (a) reduce *Ceratitidis* spp. movement beyond treated areas, and (b) reduce human-mediated transport of *Ceratitidis* spp. in host-plant materials to areas outside the quarantine. Any *Ceratitidis* spp. eradication efforts would be managed by, and wholly under the control of, VIDA. Consequently, infestations within the quarantine boundaries would not be directly addressed by federal action. Successful eradication of exotic fruit fly populations by VIDA's action alone could lead to short-term reductions in the overall area under quarantine; surveillance activities would continue. Prolonged quarantine and certification requirement could result in shipping delays, increased costs, lost markets, and spoiled harvests (APHIS 2018a).

Risk assessments prepared for APHIS fruit fly programs include thorough analyses of trap application technology and use (APHIS 2018c, 2018f, 2018g). USEPA approval of new materials and chemical formulations precedes APHIS revision of trap application information. APHIS' review of the treatment protocols found the small quantity of chemical formulations used as fruit fly pheromone lures and food baits is unlikely to result in adverse environmental or

human health risks, due to low toxicity in animal testing, high target specificity, and low exposure to humans and the general environment (APHIS 2025b, 2018c, 2018e, 2018f, 2018g, 2018h; Reilly 2003).

Potential environmental and human health impacts from cooperative fruit fly program uses of spinosad and fruit fly lure formulations were considered in the 2018 PEIS and associated human health and ecological risk assessments. APHIS reviews found no new impact concerns relating to its cooperative fruit fly program methods of spinosad application (e.g., in ground based foliar sprays) and chemical fumigation (e.g., using MB) to treat regulated plants and commodities (APHIS 2025b).

APHIS expects the delimitation and eradication activities approved for its *Ceratitidis* spp. programs to pose little threat to nontarget plants and animals when carried out as directed. APHIS anticipates that the small number of nontarget arthropods that might be caught in Program traps could have a minimal and transitory effect on the overall populations of their species. Program traps are placed out of the reach of the public so individuals living in the treatment areas are not likely to be exposed to chemical compounds used in the traps. To inform the public, traps display the appropriate warning on the product label for the level of chemical risk. There is minimal exposure risk to applicators during trap preparation and placement based on the required use of personal protective equipment and adherence to proper application procedures. The level of disturbance to the soil and vegetation from vehicles and foot traffic can vary depending on how often traps are placed and monitored.

The SIT, traps and eradication treatments administered by APHIS' fruit fly programs pose minimal risk to the human environment, as determined in the PEIS (APHIS 2018a) and associated risk assessments (APHIS 2025b, 2018b, 2018c, 2018d, 2018e, 2018f, 2018g). The prescribed uses of bait spray and host commodity fumigation would likely result in shorter periods of quarantine and/or commodity certification requirements, potentially reducing effects to agriculture and trade-related industries.

Effects Associated with Chemical Treatments

APHIS seeks to minimize the risk of environmental contamination to air and water associated with chemical treatment of *Ceratitidis* spp. A controlled release of chemicals into the environment is inherent in the limited Program use of pesticides. This section describes the processes by which spinosad moves and transforms in the environment. The environmental fate processes include: 1) persistence and degradation, 2) mobility, and migration potential to groundwater and surface water, and 3) plant uptake.

Environmental Transport and Fate

The environmental fate of a chemical depends on the combination of the chemical's properties with the prevailing environmental characteristics (temperature, pH, dilution, etc.). Direct contact with waterbodies and runoff of Program pesticides into water are highly unlikely transport events due to the targeted application methods, the use of distance buffers, and the environmental fate of the pesticides selected for use in the Program. The design criteria used to lessen adverse effects to waterbodies are described in the PEIS (APHIS 2018a). APHIS' fruit fly program

operations typically allow unique sites to depart from standard operating procedures while providing effective pest control. The range of proposed control methods and use of site-specific design criteria would accommodate sensitive locations in the St. Croix Medfly Program area.

APHIS compared the active ingredients in the treatment options with respect to their potential to affect the human environment and found the combined risk for all the pesticides in the preferred alternative is minimal. A well-coordinated eradication program using IPM technologies would result in the least use of pesticides. The implementation of Alternative 3, the preferred alternative, is likely to eliminate the Medfly infestation more effectively than the other alternatives, and consequently, the Program would make fewer pesticide applications over time. Taking no action or limiting Program actions to quarantine and commodity certification (Alternatives 1 and 2) would likely result in an expanding infestation. This would lead to more widespread use of pesticides by homeowners and commercial growers, with correspondingly greater potential for adverse effects to human health and ecosystems.

The remainder of this section reviews the active ingredients in the prescribed pesticides by summarizing information in prior NEPA analyses and chemical risk assessments (i.e., APHIS 2025b, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f, 2018g, 2002, 2001) but should not be considered encyclopedic. Please consult USEPA's website at [Pesticide Registration - USEPA](#) for additional information.

Active ingredients in the proposed treatments

MB is an organobromine compound used as a broad-spectrum fumigant to control insects, mites, rodents, plant pathogens, nematodes, termites, and weeds. It may be used as a soil fumigant, as a post-harvest treatment of commodities, and for structural fumigation (USEPA 2008). Currently, APHIS allows limited use of MB as a pesticide for certain agriculture, quarantine, and pre-shipment treatments. Additional uses were removed because MB is an odorless, colorless gas that depletes the ozone layer in Earth's atmosphere, allowing increased ultraviolet radiation to reach the planet's surface. APHIS determined that use of MB fumigation as a fruit fly quarantine treatment poses negligible potential for additive or synergistic effects to the environment (APHIS 2018a, 2002). An international treaty called The Montreal Protocol—which the United States signed in 1987—aims to phase out the production and use of methyl bromide and almost 100 other chemicals. APHIS plant protection programs are actively seeking alternatives to MB fumigation.

- MB may be used to allow movement of *Ceratitidis* -host materials outside the quarantined area. MB fumigation may be used as a commodity treatment prior to certification but would not be used as an eradication treatment. This type of use would occur under a FIFRA Section 18 Quarantine Exemption and APHIS would meet all reporting requirements. Fumigation chambers vent the small quantities used to kill *Ceratitidis* spp. MB volatilizes into air from soil and water and is known to contribute to stratospheric ozone depletion. Adverse impacts on tropospheric ozone as a result of the Program are expected to be minimal even if Program use resumes. MB use during post-harvest treatment activities is not expected to have any adverse effect on soils. Volatilization from soil is relatively rapid with half-lives ranging from 0.2 to 0.5 days, depending on

depth (APHIS 2018a). The volatilization half-life for MB from surface water ranges from 3.1 hours to 5 days. Because MB is vented to the atmosphere after Program use and volatilizes from soil and water fairly rapidly (if deposition on soil or water occurs), ground water contamination is unlikely.

Spinosad is a mixture of macrocyclic lactones, spinosyn A and spinosyn D, which are produced from a culture of a bacterial organism isolated from soil (APHIS 2025b). Spinosad would be applied as a targeted foliar spray to potential tree and shrub hosts. Spinosad is a natural substance made by a soil bacterium that can be lethal to insects (NPIC 2014). As a neurotoxin, spinosad works by disrupting nicotinic acetylcholine receptors (USEPA 2016). It has other labeled food and non-food uses including the control of fire ants, beetles, caterpillars, termites, and thrips (APHIS 2025b; Merchant 2004). Implementation of the proposed Program could lead to an increase in spinosad use and the possible overlap of Program and non-Program treatments. The environmental fate of spinosad and the Program's use patterns reduce the potential for adverse impacts to air, soil, and water quality (APHIS 2025b).

- While spinosyn A and spinosyn D degrade relatively rapidly in soil, they are highly persistent in aquatic environments (APHIS 2025b). Spinosad is not considered mobile in soil as it adsorbs strongly to soil particles and is unlikely to leach to great depths. Dissipation half-lives for spinosad in the field may last 0.3 to 0.5 days. It is photodegraded quickly on soil exposed to sunlight. Spinosad is quickly metabolized by soil micro-organisms under aerobic conditions and has a half-life of 9.4 to 64.2 days depending on the type of soil. Spinosad is not sensitive to hydrolysis, but aqueous photolysis is rapid in natural sunlight (half-life of 0.54 to 0.93 days) and is the primary route of degradation in aquatic systems exposed to sunlight. Under anaerobic conditions, the degradation rate is slower, between 161 and 250 days. Spinosad has reported half-lives of 1.2 to 16.5 days for foliar, fruits, and vegetable surfaces. After initial photodegradation, residues are available for metabolism by plant biochemical processes. Effects from residues of individual treatments are no longer detectable in environmental substrates within a few weeks of application. The lack of detectable residues in air samples monitored after spinosad application for a mainland U.S. fruit fly program demonstrated that exposure to spinosad residues in the atmosphere is unlikely (APHIS 2025b; Kollman 2003).

Additional chemical considerations

Attractants in APHIS fruit fly program treatments (i.e., fruit fly pheromone lures and food baits) minimally effect air, water, and land resources, based on USEPA-approved use patterns and the rapid degradation of the ingredients (APHIS 2018g). In general, the environmental transport and fate associated with the active ingredients (described above) forms the basis for any effects from the overall attractant. Program personnel ensure animals are kept away from spray solutions that mix food bait with toxic pesticides in case the animals are tempted to drink these solutions. The proposed Program would establish a 30-foot no-treatment buffer around water bodies and waterways during eradication treatments to prevent the discharge of pollutants to U.S. waters. The St. Croix Medfly Program would also consider site conditions and weather forecasts before

undertaking pesticide treatments (APHIS 2003). APHIS follows all pesticide label and registered use requirements to minimize the potential for effects to the environment.

The inert (other) ingredients included in the GF-120 bait spray, STATIC Spinosad ME, and the Spinosad Fruit Fly Bait products are not publicly disclosed and are considered confidential business information under FIFRA. However, all inert ingredients must be approved by USEPA for a product's use pattern prior to that product's registration, including any tolerances or exemptions from the requirement for tolerance for food uses (APHIS 2025b).

Human Health

The principal concerns for human health are related to potential Program use of chemical pesticides. Factors that affect the human health risk include pesticide toxicity and the potential for human exposure. Pesticide toxicity varies with the mode of action. These factors are influenced by the Program's pattern of use and the environmental transport and fate for each pesticide used. The analyses and data of the PEIS and its associated human health risk assessments indicate exposures to pesticides from normal Program operations are not likely to result in substantial adverse human health effects. (Refer to the PEIS (APHIS 2018a) and the human health sections of the supporting risk assessments (APHIS 2025b, 2018b, 2018c, 2018d, 2018e, 2018f, 2018g) for additional information on risks to human health.)

The PEIS (APHIS 2018a) determined that risks to human health from the proposed pesticide treatments are minimal, based on the low probability of exposure to people and the environment by adherence to USEPA pesticide label requirements, the use of personal protective equipment, environmental fate and effects data, and the Program's proposed use pattern.

- MB binds to the genetic material of living organisms, and to fats and proteins (NPIC 2000). Human exposure to high concentrations of MB can cause central nervous system and respiratory system failures and can harm the lungs, eyes, and skin. Should treatment by MB fumigation be indicated, adherence to USEPA label restrictions and product application in enclosed areas or containers would protect applicators and the public from risk of exposure to the fumigant (APHIS 2018a, 2002).
- Spinosad targets the nervous system of invertebrates. Contact may irritate human skin and eyes (NPIC 2014) but overall spinosad has low acute toxicity for oral, dermal, and inhalation routes of exposures. USEPA studies indicate spinosad is unlikely to be neurotoxic, mutagenic, carcinogenic, or immunotoxic in mammals. APHIS evaluated the proposed uses of spinosad in aerial or ground-based foliar spray applications and determined that the risk to human health is minimal (APHIS 2025b). After pesticide application, the potential for human exposure is low because spinosad does not persist in the environment. Also, the Program's spinosad use patterns and adherence to product label requirements substantially reduces the potential for exposure (APHIS 2025b; Kollman 2003).

Among the alternatives considered, a well-organized eradication plan using IPM technologies reduces the use of chemical pesticides and lowers their potential harm to human health. The potential human populations at risk include workers who handle pesticides and the public residing in or visiting areas targeted for *Ceratitis* spp. eradication.

For Program workers, the risk of exposure is low when they use proper personal protective gear and engineering controls. Accidental exposure, primarily during pesticide mixing, loading, and spraying, is the most plausible route of exposure for Program workers. However, the risk of such accidental exposure is minimal because only certified applicators working with federal and state agencies, or individuals under their supervision, would handle chemicals in the St. Croix Medfly Program. USEPA has established worker protection standards for pesticide handlers and their employers (For detailed information go to <https://www.epa.gov/pesticide-worker-safety>).

Pesticide exposure to the public is unlikely based on Program adherence to USEPA product labeling, which contains legal requirements and design criteria for the pesticide to be used. APHIS does not expect adverse public health risks because there is a notification process that occurs in advance of the treatment, ground-based treatments are highly localized, and the Program maintains restricted entry and post-harvest intervals. Public notification includes sharing information concerning Program control actions via press releases and media announcements.

Depending on the treatment area, the USVI agricultural commissioner, extension agent, or public information officer would serve as the primary media liaison. Any resident with property to be treated would be directly contacted or notified in writing at least 48 hours prior to treatment of the property, unless permission were granted for immediate treatment (C. Marzolf, personal communication, 2026-09-16). Program personnel also leave notices on property after treatment. The notices detail any precautions people should take and identify any intervals of time that should elapse before harvesting fruit on the property. APHIS and VIDA would provide information about the Program for distribution to property owners and residents. The risks to the public associated with dietary consumption of fruit from treated plants are low, based on the Program's removal of fruit in treated areas and the notification processes.

In addition, Program site inspections ensure chemical treatments are not likely to affect humans and ecosystems. Trap placement and chemical applications may be rescheduled if strong winds or rains are forecast for the Program area or nearby areas. These procedures reduce the potential for pesticide movement in water and air to nontarget locations. The Program establishes no-spray buffer zones to reduce the potential for pesticide drift and runoff. For these reasons, Program operations are unlikely to adversely affect soil and water features in the Program area. The destruction or relocation of traps and treatments due to stormy weather is unlikely to adversely affect the local environment and human health because the amount of pesticide is diluted during the storm's water and air movement.

Some fruit fly trap food baits and chemical attractants can be irritating to eyes, skin, and the upper respiratory system: the risk of exposure is negligible if trap materials are stored and handled according to USEPA-registered label directions. Traps would be combusted in a fire; some lure components can emit toxic fumes if burned so people in proximity should be

evacuated to prevent exposure (APHIS 2024). The destruction or relocation of traps and treatments due to hurricanes and rainstorms is unlikely to adversely affect the human environment because the amount of pesticide is diluted during the event's water and air movement.

APHIS recognizes a small portion of the population may have greater than usual sensitivity to certain chemicals, and Program treatments may pose heightened risks to these individuals. To minimize danger to human health and prevent the release of pollutants, the St. Croix Medfly Program would monitor climate weather conditions when scheduling chemical treatments and Program activities, to minimize danger to human health and prevent the release of pollutants. Program personnel would communicate with individuals identified as sensitive before making treatments to their properties and would notify the public before treating public-access areas. People on St. Croix should report any suspected pesticide illnesses or misuse to the USVI Department of Health Epidemiology Division or contact the Department of Planning and Natural Resources via their [hotline](#) for environmental exposure.

Nontarget Species

Under the no action alternative and the quarantine and commodity certification alternative, continued Medfly infestation could damage host fruit and prompt additional pesticide use by residents or growers. The extent of such use is uncertain; effects on nontarget species would depend on the products, application practices, and habitats exposed. Coordinated, targeted eradication under the preferred alternative is intended to limit the duration and extent of pesticide use while protecting susceptible host plants (APHIS 2018a).

The mapped treatment core encompasses approximately 9.4 square miles of land and adjacent marine waters west of central Christiansted, including the Richmond and La Grande Princesse vicinity. This combined land-and-water area is not the acreage that would receive pesticide. Proposed ground-based bait sprays would be localized to suitable host vegetation within 200 meters of qualifying detections, as described in Chapter 2. The 96 Hour Report identifies four Medflies at three residential sites in tropical almond trees (*Terminalia catappa*), no commercial host production within 4.5 miles, and no control actions underway at the time of that report (APHIS 2026a).

The treatment-area resource inventory identifies Estate Little Princess Nature Preserve, La Grande Princesse Park, the Estate Richmond waterfront, Christiansted National Historic Site, Salt River Bay National Historical Park and Ecological Preserve, and other mapped National Park Service property. The inventory also identifies Christiansted Harbor, coastal marine waters, and unnamed streams. These entries do not establish that an entire protected property lies within the boundary or that treatment is proposed there; property limits and actual work sites would be checked before access or treatment (See Appendix B, Geospatial Resources Used for Environmental Analysis). Salt River Bay protects mangrove, estuarine, and coral-reef habitats, reinforcing the importance of avoiding spray and runoff to coastal resources (NPS 2018).

Green Cay National Wildlife Refuge and Southgate Coastal Reserve are not identified as protected areas within the treatment area. The September 4, 2026 IPaC report for the matching project boundary identifies no National Wildlife Refuge lands or fish hatcheries within that boundary. However, the report identifies critical habitat overlaps; absence of refuge land does not mean absence of protected species or habitat. The relevance of these overlaps depends on the

actual work locations and the separate species-specific Endangered Species Act analysis (USFWS 2026a).

Baits and traps: The documented surveillance methods are Jackson sticky traps with trimedlure and Multilure traps with a three-component food lure. Jackson traps retain insects on sticky inserts, while the described wet-use Multilure options retain insects in liquid; insecticide exposure is not assumed for every trap. Although the attractants have low toxicity under the evaluated use patterns, sticky surfaces and liquid traps may capture nontarget arthropods. Trap placement, regular servicing, secure attachment, recovery of spent materials, and proper disposal of lure and liquid contents would limit bycatch and environmental exposure. The small, localized losses anticipated under these use patterns are not expected to affect nontarget populations substantially (APHIS 2018a, 2018g, 2026c).

Ground-release SIT: The preferred alternative includes ground-based releases of sterile male Medflies as described in Chapter 2. No aerial sterile-insect releases are proposed. SIT is species-specific and does not involve applying insecticide; irradiation-sterilized flies are not radioactive. Released flies may temporarily supplement food available to insectivorous birds and other predators. The PEIS identifies no risk from consuming sterile flies attributable to their sterility, while recognizing that increased adult fly numbers and competition for food may briefly alter food-web relationships (APHIS 2018a).

Ground-release and monitoring vehicles would remain on existing roadways and established parking or staging areas; personnel would use existing pedestrian access routes and retrieve spent release materials. Repeated visits could temporarily disturb wildlife, but no vegetation clearing or off-road vehicle access is proposed. Release and staging locations would be checked for sensitive habitat and coordinated with land managers. The mapped core and minimum-200-meter pesticide treatment zones do not establish the final ground-release SIT footprint; screening would extend to any additional release or support locations (see Chapter 2).

Spinosad: The incorporated risk assessment characterizes spinosad as having low toxicity to birds and mammals, but greater toxicity to bees and some aquatic invertebrates. Risk therefore depends on preventing exposure, not simply on the product's natural origin. GF-120 bait would be applied in large, directed droplets to selected host foliage rather than broadcast over the entire mapped core. Applicators would follow label restrictions, avoid exposing foraging pollinators to wet bait, and postpone spraying when wind or rain could carry pesticide beyond the treatment site (APHIS 2025b; NPIC 2014).

The Program's proposed design criteria include a 30-foot no-treatment buffer around waterbodies and waterways, a 10-foot setback for traps from surface water, and no spinosad application to open natural habitat, protected areas, riparian areas, marshes, swamps, or shorelines. These distances and exclusions are proposed project safeguards, not a statement that identical setbacks apply under every pesticide label. Any more protective label requirement would also apply. Open water inside the screening polygon is not a pesticide application area. Surveillance, ground-based sterile-insect releases, or hand removal of host fruit at sensitive sites require land-manager coordination and site-specific avoidance of nontarget organisms and habitat (APHIS 2018a; see Chapter 2 and the Endangered Species Act section).

Host-fruit removal could temporarily reduce a localized food resource for wildlife, and repeated site visits could disturb animals or vegetation. Work would use existing access routes, avoid active bird nests and sensitive vegetation, and remove fruit rather than clear trees or native

habitat. Contained post-harvest heat or cold treatments offer limited wildlife exposure pathways. Methyl bromide fumigation would require separate consideration of any venting emissions; enclosure alone does not eliminate exposure outside the enclosure (APHIS 2018a). With the described treatment limits, ground-release SIT safeguards, and avoidance measures, substantial population-level effects on nontarget species are not anticipated. This conclusion does not substitute for species-specific Endangered Species Act review.

Migratory Birds

The Migratory Bird Treaty Act of 1918, as amended (16 USC §§ 703–712), prohibits unauthorized take, capture, killing, and other specified acts involving protected migratory birds, their parts, nests, or eggs. The list of protected birds is provided in 50 CFR § 10.13 (USFWS 2026b). No purposeful take of migratory birds is proposed. The Program would avoid harming birds and disturbing occupied nests during trapping, fruit removal, sterile insect releases, and pesticide application.

Executive Order (EO) 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, directs federal agencies taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement a memorandum of understanding with the U.S. Fish and Wildlife Service (USFWS) to promote conservation. It also directs agencies to consider migratory birds in environmental analyses and avoid or minimize adverse effects, consistent with their authorities (Executive Office of the President 2001).

The treatment boundary includes developed areas, trees and gardens, waterfront habitat, and offshore waters. These settings warrant screening for birds using vegetation for feeding or nesting and for waterbirds along the coast. Before work, personnel would check actual treatment, ground-based SIT release and staging, and access locations for birds and occupied nests. The available project record does not establish a single breeding-season window applicable to all birds that may use this area.

The migratory bird list identifies 16 species for screening in relation to the proposed action (Table 8; USFWS 2026a). Inclusion does not establish occurrence, nesting, or a breeding colony at a treatment site. Regional breeding information is distinguished from migration and nonbreeding use; dates retained from the migratory bird list are regional screening information, not a verified St. Croix work-avoidance calendar. The table is not an exhaustive list of protected birds or a determination that each species has a formal Birds of Conservation Concern designation. Work-site inspections and appropriate coordination would address birds, occupied nests, and sensitive habitat that could be affected.

Spinosad's low acute and chronic avian toxicity and the localized bait-spray pattern reduce the likelihood of harmful exposure, but do not justify an absolute finding of no exposure. Traps would be secured and serviced to avoid wildlife access to spilled contents. Fruit stripping could briefly reduce food availability at treated host trees, and personnel visits could disturb nearby birds. The Program would retain vegetation, avoid contact with birds, nests, and eggs, and defer or relocate work near occupied nests until disturbance can be avoided. Any necessary nest-avoidance distance and timing would reflect the species and site conditions, with USFWS coordination as appropriate (APHIS 2018a, 2025b).

Table 8. Migratory Bird Species Identified in Screening for the Proposed St. Croix Medfly Action.

Common name	Scientific name	Seasonal occurrence and breeding context
American redstart	<i>Setophaga ruticilla</i>	May–August temperate-region breeding in the list; Caribbean nonbreeding use does not establish local nesting.
Black-capped petrel	<i>Pterodroma hasitata</i>	November–June breeding on Hispaniola in the list. This is not a St. Croix nesting record; year-round use of this core is unconfirmed.
Blackpoll warbler	<i>Setophaga striata</i>	May–August boreal breeding in the list; trans-Atlantic migrant that winters primarily in South America (NPS 2021).
Bridled quail-dove	<i>Geotrygon mystacea</i>	Spring–summer breeding is regional context. Current occurrence and a resident breeding population in this core are unconfirmed.
Brown pelican	<i>Pelecanus occidentalis</i>	Year-round residency in the list describes occurrence, not continuous nesting. Local colony locations and breeding timing remain unverified.
Caribbean martin	<i>Progne dominicensis</i>	March–August Caribbean breeding in the list; no local colony or core-specific nesting window is established.
Hudsonian whimbrel ¹²	<i>Numenius hudsonicus</i>	American taxon under the 2025 eBird/Clements taxonomy. May–August northern breeding is regional context, not St. Croix nesting.
Magnificent frigatebird	<i>Fregata magnificens</i>	Year-round occurrence and offshore-cay nesting are regional context; no nesting cay is documented inside this core.
Northern parula	<i>Setophaga americana</i>	April–July breeding outside the USVI in the list; those dates are not a St. Croix nesting window.
Peregrine falcon	<i>Falco peregrinus</i>	The list describes Caribbean wintering and North American breeding; these are separate seasonal contexts, not a local nesting record.
Piping plover	<i>Charadrius melodus</i>	April–July breeding outside the USVI in the list; local screening concerns passage or nonbreeding use.

¹² The list used Whimbrel, *Numenius phaeopus*. The American taxon is Hudsonian whimbrel, *Numenius hudsonicus*, in the 2025 eBird/Clements treatment; 50 CFR § 10.13 retains Whimbrel, *Numenius phaeopus*, under its regulatory nomenclature. The name update does not establish local occurrence (Cornell Lab of Ornithology 2025; USFWS 2026b).

Common name	Scientific name	Seasonal occurrence and breeding context
Red knot (rufa)	<i>Calidris canutus rufa</i>	June–July Arctic breeding in the list; Caribbean use is nonbreeding or passage, not a local nesting calendar.
Roseate tern	<i>Sterna dougallii</i>	April–August in the regional list; no colony or core-specific nesting period is established.
Semipalmated sandpiper	<i>Calidris pusilla</i>	June–July Arctic breeding in the list; Caribbean passage/nonbreeding use is distinct from breeding.
West Indian whistling-duck	<i>Dendrocygna arborea</i>	Year-round/spring–summer breeding information is unverified for this core. Local occurrence and nesting require supporting records.
White-crowned pigeon	<i>Patagioenas leucocephala</i>	April–September Caribbean breeding in the list; the core-specific nesting period is not established.

Sources: Project bird list (USFWS 2026a), with the whimbrel taxonomic annotation from Cornell Lab of Ornithology (2025) and the blackpoll migration correction from NPS (2021). Regulatory nomenclature follows 50 CFR § 10.13 (USFWS 2026b). Local occurrence and nesting are not established by this table.

The temporary SIT food-resource effects described under Nontarget Species also apply to insectivorous birds. SIT would use ground releases only; no aircraft would be used to release sterile flies over the Program area. Ground-release and monitoring visits could cause localized, temporary disturbance; release and staging points would avoid occupied nests and concentrations of roosting or feeding birds. Vehicles would remain on existing roadways and established parking or staging areas, and personnel would use existing pedestrian access routes. Work would be deferred or release points relocated where necessary to avoid disturbance to birds and occupied nests (APHIS 2018a; see Nontarget Species).

Neither aerial pesticide applications nor aerial sterile-insect releases are included in the proposed methods evaluated here. Shoreline and waterbody exclusions would reduce exposure pathways for coastal birds. With secure trap placement and servicing, avoidance of birds and occupied nests, retention of vegetation, SIT safeguards, and the proposed treatment limits, substantial population-level effects are not anticipated. Fruit removal, work-site visits, and ground-based SIT delivery operations could nevertheless cause localized, temporary effects. The population-level conclusion depends on applying the site-specific ground-release SIT safeguards described above. Any proposed commodity fumigation would require evaluation of its location and venting near bird habitat rather than an assumption that air dilution eliminates risk. Effects on federally listed birds must be addressed separately under the Endangered Species Act (APHIS 2018a, 2025b; see Chapter 2 and the Endangered Species Act section in this chapter).

Endangered Species Act

Section 7 of the Endangered Species Act (16 USC §§1531 *et seq.*) and its implementing regulations (50 CFR Part 402) require federal agencies to consult with USFWS and/or the

National Marine Fisheries Service (NMFS) to ensure that their actions are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat. If listed species or critical habitat are present in the area and Program activities may affect them, APHIS consults with USFWS and NMFS, as appropriate.

U.S. Fish and Wildlife Service Jurisdiction Species

APHIS reviewed the proposed Program area on St. Croix and treatment activities for potential co-occurrence of federally listed species and critical habitat under USFWS and NMFS jurisdiction to determine if any proposed Program treatments may affect listed species or critical habitat (see Appendix B for geospatial data source). Federally listed species near the proposed Program area include the threatened West Indian manatee (*Trichechus manatus*), Green sea turtle (*Chelonia mydas*; South Atlantic DPS), and Roseate tern (*Sterna dougallii dougallii*). Species listed as endangered include Black-capped petrel (*Pterodroma hasitata*), Hawksbill sea turtle (*Eretmochelys imbricata*), Leatherback sea turtle (*Dermochelys coriacea*), and the St. Croix ground lizard (*Ameiva polops*). Listed plants include Vahl's boxwood (*Buxus vahlii*), *Catesbaea melanocarpa* (no common name), and *Agave eggersiana* (no common name). Proposed critical habitat for the green sea turtle, *Agave eggersiana*, *Catesbaea melanocarpa*, and Leatherback sea turtle overlaps with the proposed quarantine area. However, because critical habitat for sea turtles includes coastal shoreline areas, it is outside of Program treatment areas.

In the minimum-200-meter-radius treatment areas, spinosad use as a spray is directed to the target plant in a large spray droplet that contains a fruit fly attractant reducing exposure to nontarget organisms. The large droplet size reduces the potential for off-site drift and does not completely cover the plant surface being treated when compared to broadcast applications that would use a smaller droplet size. Spinosad acute and chronic toxicity to birds is low (APHIS 2025b), and spinosad would not be applied to any open habitat, wild lands, valley and foothill grasslands or riparian areas including marshes, swamps, or shoreline areas. A 30-foot no-treatment buffer would be used around all waterways. Because these treatments are highly localized and applied by hand, it is highly unlikely that any federally listed species that might enter treatment areas would be exposed to treatments. Risks to nontarget fish and wildlife are anticipated to be extremely low to non-existent based on the proposed use pattern that would result in a low potential for exposure to federally listed species. The establishment of 30-foot buffers from water further decreases this potential. The Program does not use herbicides and thus would have no effect on listed plant species. Because all listed non-plant species occur in shoreline and aquatic areas and considering the no-treatment buffers for open habitat, riparian areas, and shorelines, the Program would have no effect on listed species or critical habitat. SIT is expected to have no adverse effect on nontarget species. As such, SIT will have no effect on listed species or any designated or proposed critical habitat.

Federally listed species that come into close contact with Program traps could be exposed to insecticide. The Program traps would be placed in locations that are easily accessible by roads and rights of way; animal behavior would likely be undisturbed and plants in natural areas would not be trampled. There are no listed insects in the Program area. As such, trapping would have no effect on these species or any designated critical habitat.

National Marine Fisheries Service Jurisdiction Species

APHIS used the National Oceanic and Atmospheric Administration (NOAA) Fisheries Protected Resources App (see Appendix B for geospatial data source) and found species listed below in the proposed Program area.

APHIS assessed potential impacts to NOAA listed species and critical habitat on St. Croix near and within the Program area. These species and habitats include: Queen conch (*Aliger/Strombus gigas*); Boulder star coral (*Orbicella franksi*); elkhorn coral (*Acropora palmata*); lobed star coral (*Orbicella franksi*); mountainous star coral (*Orbicella faveolata*); pillar coral (*Dendrogyra cylindricus*); rough cactus coral (*Mycetophyllia ferox*); staghorn coral (*Acropora cervicornis*), Green sea turtle (*Chelonia mydas*); hawksbill turtle (*Eretmochelys imbricata*); loggerhead turtle (*Caretta caretta*); leatherback sea turtle (*Dermochelys coriacea*); Giant manta ray (*Mobula birostris*); oceanic whitetip shark (*Carcharhinus longimanus*); scalloped hammerhead shark (*Sphyrna lewini*); Nassau grouper (*Epinephelus striatus*); and Sperm whale (*Physeter macrocephalus*). There is no designated or proposed critical habitat for the species on St. Croix.

The proposed no treatment buffers are considered to be conservative measures of protection for fish and other aquatic species. Application buffers for traps are meant to minimize the accidental deposit of a trap into surface water. Accidental direct deposit of a pesticide-loaded trap in water suggests some risk to aquatic invertebrates but the assumptions in the risk characterization are conservative as it assumes that all the active ingredients would be instantaneously released into a water column. This is unlikely because the active ingredient would slowly dissipate from the wick over time. In addition, the proposed risk characterization did not allow for any degradation of the insecticide, and in reality, this would be rapid based on spinosad's environmental fate. Traps are not typically placed over water, so as to facilitate recovery; however, a ten-foot buffer would further reduce the probability of a trap falling to the ground and being carried to a water body. A 30-foot buffer for eradication treatments using spinosad would also be protective of aquatic resources based on the conservative assumptions in the risk characterization section for that particular use pattern. Spinosad would not be applied to any open habitat, wild lands, valley and foothill grasslands or riparian areas including marshes, swamps, or shoreline areas. SIT is expected to have no adverse effect on nontarget species, including aquatic species. As such, SIT will have no effect on listed species. For these reasons, APHIS has determined the Program would have no-effect on NMFS species.

MB fumigation is used only on commodities, and not as an eradication treatment. Federally listed species would not be exposed to MB fumigation treatments because the vented gas is rapidly dispersed and diluted in the air. MB fumigation would have no effect on federally listed species or critical habitat.

A complete administrative record of this review is available upon request. If the St. Croix Medfly Program expands, if additional species become federally listed as threatened or endangered, or new critical habitat is designated in the Program area, APHIS would initiate consultation with USFWS or NMFS, as necessary.

Other Aspects of the Human Environment

This section considers additional regulatory and demographic factors, and the potential for aggregate effects with other pest management programs.

Air Quality and the Clean Air Act

The Clean Air Act (CAA; 42 USC § 7401 et seq.) provides for regulation of emissions from stationary and mobile sources and establishes the framework for National Ambient Air Quality Standards (NAAQS). The U.S. Virgin Islands Department of Planning and Natural Resources (USVI-DPNR), Division of Environmental Protection, administers the territorial Air Pollution Control Program in coordination with USEPA. The proposed field activities would not construct or modify a stationary emission source. Any separately proposed fumigation facility would require review for applicable territorial and federal permitting requirements (USEPA 2015; USVI-DPNR 2026).

The treatment core lies along St. Croix's developed north coast, west of central Christiansted. Existing influences include road traffic, harbor and seaplane activity, island power generation and industrial sources, sea salt, and windblown dust. USEPA's designations at 40 CFR § 81.356 identify the Virgin Islands as attainment/unclassifiable for the 2015 ozone standard and the 2010 sulfur dioxide standard; St. Croix is unclassifiable for the 2012 annual fine-particulate-matter (PM_{2.5}) standard. Review of that section identifies no nonattainment or maintenance designation covering the treatment core. An unclassifiable designation is not proof that every site meets every standard. General Conformity under 40 CFR Part 93, Subpart B applies to applicable federal-action emissions in nonattainment or maintenance areas; § 93.153 addresses direct and indirect emissions and the relevant thresholds. On the reviewed designations, a General Conformity determination is not required for the proposed activities in this core. The final ground-based SIT release and support-operation locations would also be screened for applicability. Applicability would be reconsidered if the action's location or relevant designations change (USEPA 2026c, 2026d).

Ground vehicles and small equipment used for surveillance, trap servicing, host-fruit removal, spot spraying, sterile-fly transport, and ground-based SIT release and monitoring would emit combustion pollutants. Localized dust or exhaust could occur during site visits. The preferred alternative includes ground-release SIT only. Neither aerial pesticide spraying nor aerial sterile-insect releases are proposed. Consolidating trips, avoiding unnecessary idling, maintaining equipment, and following weather-related spray restrictions would limit emissions and drift. Localized ground operations, including SIT support and ground releases, are expected to add small, temporary emissions; however, the record does not provide confirmed SIT coverage and scheduling, vehicle mileage, fuel consumption, fleet characteristics, or operating duration sufficient to calculate a project emission total. No numerical de minimis finding is asserted from the illustrative factors below (APHIS 2018a, 2025b; USEPA 2025d).

Because SIT would be conducted by ground release, aircraft release flights and their associated exhaust are not components of the proposed field operations. The emissions discussion instead covers sterile-fly transport, ground releases, and related vehicle and

equipment use. Ground-only release does not exclude emissions from transporting sterile flies to St. Croix; the project record does not specify shipment modes, frequency, or fuel use. The final ground-release area, schedule, and supporting transport activity would need to be documented before total emissions could be estimated. Ground-release SIT does not change the separate methyl bromide requirements below (see Chapter 2).

Title VI—Stratospheric Ozone Protection: The implementing regulations relevant to methyl bromide are USEPA’s regulations in 40 CFR Part 82, particularly Subpart A, Production and Consumption Controls. This is Title VI of the Clean Air Act, not Title VI of the Civil Rights Act. Methyl bromide is a Class I ozone-depleting substance. The quarantine and pre-shipment (QPS) provisions allow production and import for qualifying uses; they are not an unrestricted authorization for any fumigation associated with a quarantine (USEPA 2026a, 2026b).

Before relying on QPS methyl bromide, the commodity treatment must satisfy the definitions in 40 CFR § 82.3 and the applicable controls in § 82.4. Quarantine applications must meet the official-control and pest-prevention criteria. Pre-shipment applications must be non-quarantine applications made within 21 days before export to meet applicable official phytosanitary or sanitary requirements. Methyl bromide for QPS may not be used for a nonqualifying purpose (§ 82.4(r)). Applicators must meet the applicable certification and recordkeeping requirements of § 82.13(z), and commodity owners, shippers, or their agents must meet the applicable requirements of § 82.13(aa), including retaining the required documentation for three years. QPS eligibility does not replace FIFRA registration, label compliance, or any separate emergency-exemption approval needed for the particular pesticide use (USEPA 2026b; see Chapter 2).

Methyl bromide is considered here only as a potential post-harvest commodity treatment, not as a field eradication spray. The present project record identifies neither a specific fumigation facility nor a treatment quantity. Before such use is selected, APHIS would confirm the applicable authorization, QPS eligibility, location, amount, release controls, and potential exposure of nearby residents and habitat, and determine whether additional environmental review is needed. Venting releases methyl bromide to the atmosphere; enclosure and subsequent dilution do not remove its ozone-depleting effect. The Program’s preference for suitable non-methyl-bromide treatments therefore remains relevant (APHIS 2018a; USEPA 2026a, 2026b).

Tables 9 and 10 provide reference factors from USEPA’s 2025 publication for illustrative ground-vehicle calculations, not measured Program emissions. Carbon dioxide may be estimated from actual fuel use, while the methane and nitrous oxide factors must be matched to actual vehicle class and model year. These factors can be used for appropriately matched vehicles used in ground-release SIT. Aircraft factors have been omitted because aerial operations are not proposed. These emission factors do not establish emissions of NAAQS pollutants or demonstrate compliance with General Conformity thresholds (USEPA 2025d).

Table 9. Carbon Dioxide Emission Factors for Ground-Vehicle Fuels.

Fuel	Kilograms CO ₂ per U.S. gallon
Motor gasoline	8.78
Diesel fuel	10.21

Source: (USEPA 2025d, Table 2.) Factors represent combustion emissions per unit of fuel, not a project total.

Table 10. Selected On-Road Methane and Nitrous Oxide Emission Factors.

Vehicle category and model year	Grams CH ₄ per vehicle-mile	Grams N ₂ O per vehicle-mile
Gasoline passenger car, 2022	0.0050	0.0014
Gasoline light-duty truck, 2022	0.0079	0.0012
Diesel passenger car, 2007–2022	0.0302	0.0192
Diesel light-duty truck, 2007–2022	0.0290	0.0214

Source: (USEPA 2025d, Tables 3 and 4.) Selected examples only; no assertion is made that the Program fleet has these vehicle classes or model years. CH₄ = methane; N₂O = nitrous oxide.

Tribal Domains

APHIS considers potential Tribal implications under EO 13175, Consultation and Coordination with Indian Tribal Governments, and potential effects on Indian sacred sites under EO 13007, Indian Sacred Sites. Archaeological resources on applicable federal or Indian lands are also subject to the Archaeological Resources Protection Act (16 USC §§ 470aa–470mm). No Native American areas were identified in the treatment-area resource inventory (Treatment-area resource inventory: See Appendix B for data sources). Separately, the Bureau of Indian Affairs' January 30, 2026 list does not identify a federally recognized Indian Tribe based in the USVI (Bureau of Indian Affairs 2026). Neither finding establishes that Indigenous cultural resources, traditional uses, sacred places, or Tribal interests are absent. APHIS would identify and consider any such resources or interests that could be affected by the proposed action and undertake applicable coordination and consultation.

On June 28, 2021, the Governor of the USVI issued a proclamation recognizing the Guainía Taíno Tribe of the Virgin Islands as an Indigenous American Indian tribe of the territory. Territorial recognition is distinct from federal recognition. APHIS would coordinate with Guainía Taíno representatives regarding potentially affected cultural resources and access, as appropriate; this coordination would not be described as federal government-to-government consultation with a federally recognized Tribe. Non-federally recognized Indigenous groups may also provide information or participate in the Section 106 process based on a demonstrated interest (Government of the U.S. Virgin Islands 2021; ACHP 2018).

The absence of mapped Tribal lands does not itself remove a federal agency's Section 106 responsibilities. Under 36 CFR § 800.2(c)(2)(ii), APHIS must consult any federally

recognized Tribe that attaches religious or cultural significance to historic properties that may be affected, regardless of whether those properties are on Tribal lands. APHIS would make a good-faith effort to identify such interests if the undertaking could affect those properties. Coordination with the USVI State Historic Preservation Officer (SHPO) does not substitute for required Tribal consultation (Office of the Federal Register 2026).

The treatment area is located in the vicinity of Salt River Bay. The project inventory identifies Salt River Bay National Historical Park and Ecological Preserve in or near the treatment boundary (see Appendix B, Geospatial Data Resources Used for Environmental Analysis). National Park Service documentation describes its Indigenous archaeological history, including Taíno and Island Carib cultural associations (NPS 2022). Mapped property and treatment limits would be checked with the land manager rather than assuming that all park resources are within an application area.

The ground-release SIT footprint may differ from the pesticide treatment zones. APHIS would screen release and staging locations for cultural resources and access concerns rather than assume that the existing treatment-core inventory covers every SIT site. Repeated ground-release and monitoring visits, including vehicle access and staging, would be coordinated to avoid disrupting identified sacred-site access or cultural practices. These considerations would be addressed through the coordination and consultation described above before implementing the site-specific SIT plan.

The proposed work involves trap servicing, localized foliar bait application, hand removal of host fruit, and ground-based sterile-insect releases, it does not involve excavation, soil treatment, or vegetation clearing. Personnel would use existing access routes and avoid archaeological features, burial places, sacred sites, and identified culturally important plants or practices. If previously unidentified cultural materials or human remains are encountered, work at that location would stop, the materials would be left undisturbed, and the landowner or manager and SHPO would be notified; APHIS would involve appropriate Tribes and authorities before work resumes. With avoidance and appropriate coordination, effects on Indigenous cultural resources are not anticipated.

Socioeconomics

As indicated in the previous sections, four Medflies were recently found in tropical almond trees in Christiansted, a city of St. Croix, USVI. St. Croix is the largest island in the USVI, spanning approximately 84 square miles in the Caribbean Sea and situated about 40 miles south of St. Thomas. An unincorporated U.S. territory, St. Croix serves as a cultural cornerstone of the USVI, shaped by a rich heritage influenced by a mix of cultures including Spanish, French, Danish, African, and American.

The island's population, estimated at roughly 41,000 (USCB 2021, 2022), has declined more than 18% over the past decade largely due to the closure of the Hovensa oil refinery in 2012, the devastation caused by Hurricanes Irma and Maria in 2017, and economic disruptions during the COVID-19 pandemic (USVIBER 2022).

St. Croix's geography with its expansive fertile plains (once home to more than 100 sugar plantations) makes the island's agriculture an important component of the local economy and culture, with farms producing mangoes, avocados, citrus, papaya, peppers, and tomatoes, which are crops highly susceptible to Medfly infestation. The agricultural economy of St. Croix plays a vital role in supporting food security, local livelihoods, and cultural heritage within the USVI. Data from USDA-NASS (2025) indicates that with 455 farms covering over 6,500 acres, St. Croix's agriculture contributes to the island's economic resilience through the production of vegetables, fruits, and livestock, generating more than \$2.2 million in sales in 2023; and that beyond its economic impact, farming sustains rural communities, provides fresh local produce, and helps preserve traditional practices in a region vulnerable to supply chain disruptions and natural disasters. Investments in irrigation, crop diversity, and value-added products underscore agriculture's importance as both an economic driver and a cornerstone for environmental stewardship and disaster recovery planning on St. Croix. Medfly attacks over 300 types of fruits, nuts, and vegetables, posing a serious threat to both commercial and subsistence farming.

In the USVI (particularly on the main islands of St. Croix, St. Thomas, and St. John), many farms and agricultural areas are potential targets for Medfly. On St. Croix vulnerable locations include Ridge to Reef Farm, ARTfarm, Little La Grange Farm, Sejah Farm, Organic Family Farm in the Rainforest, St. Croix Agricultural Fairgrounds, Coral Bay Organic Farm/Josephine's Greens, Hideaway Farm, Wenner Hill Gardens, and Island Eco Farm, among others. The Christiansted Medfly detection area contains no commercial host production but the presence of naturally occurring and privately cultivated Medfly-host plants increases the local risk of economic and environmental impacts.

Medfly infestations render crops unmarketable and inedible due to fruit quality loss, affecting both producers and consumers. Quarantine restrictions on moving produce out of affected areas, designed to protect the broader U.S. agricultural industry, further disrupt local trade and food supply chains. These impacts extend beyond agriculture, influencing household income, employment, poverty levels, and cultural practices tied to farming and food traditions.

To evaluate socioeconomic implications, APHIS utilized data from the U.S. Census Bureau (USCB 2021, 2022): St. Croix's population is predominantly Black or Afro-Caribbean (71%), with significant Hispanic or Latino representation (24%) - primarily Puerto Rican and Dominican - and a smaller White population (12%). Socioeconomic indicators reveal persistent challenges: the median household income in 2020 (\$39,445) is slightly below the USVI average (\$40,408) and well below the U.S. mainland median (\$67,521), while poverty affects 24.9% of residents compared to 22.3% across the territory. Additional data on education, employment, and housing in the USVI and on St Croix Island are presented in Table 11.

Table 11. Demographics and Socioeconomics in the Proposed Program Area.

Socioeconomic Factors	Island of St. Croix	USVI	Medfly Program Treatment Core
Land area (square miles)	84.00	133.00	9.39
Population estimate (2020)	41,000	87,146	5,922
Population density (per sq. mile)	488	655	631
Race and Ethnicity (%)			
American Indian and Alaska Native	0.4	0.4	0
Asian	1.2	1	1
Black or African American	71.0	71.4	73
Native Hawaiian and Pacific Islander	0.1	0.1	0
Two or More Races	8.5	7.5	1
White	12.5	13.3	12
Hispanic or Latino	24.5	18.4	30
Age (%)			
Youth (under 18)	20.1	19.6	18
Senior (over 65)	21.2	23.1	25
Median	45.2	45.9	42.0
Education (%)			
High School graduate or higher	73.4	78.3	69
Bachelor's degree or higher	20.5	22.3	20.0
College, graduate or professional	5.6	17.9	12
Language other than English (age 5+)	30.5	30.2	30.5
Median household income (2019) (\$)	\$39,445	\$40,408	\$42,000
Other factors (%)			
People under 65 with disability	8.5	8.7	9.1
Housing (%)			
Owned/Rented	50.5/49.5	47.8/52.2	50.5/49.5
Households with computer	84.9	58.3	57
Households with Internet	71.3	79.2	55
Civilians 16 years+ in labor force (%)	50.8	47.8/52.2	46.2
Poverty (%)	24.9-26.1	58.3	14.0

Sources: (USCB 2021, 2022, 2023)

If APHIS takes no action to deter the confirmed Medfly infestation in the Christiansted district, or if the agency's response is limited to quarantine and commodity certification, the socioeconomic situation in the Medfly infested locations could decline. Direct economic impact on subsistence and commercial farms within the Medfly infested area could result in decreased plant inventories and thus reduced profits for producers of agricultural commodities.

Ongoing Medfly infestation, and its gradual expansion into areas of agricultural production, may lead to other (indirect) consequences such as possible overuse of pesticides by individual growers, leading to more insecticide use/environmental pollutants; increase of a farmer's expenses to protect crops and sustain production; possible switch from Medfly host crops to non-Medfly host crops; interruption of orchard production; farmworker unemployment; increased stress (lower morale) and other production and human health concerns in the agricultural producer community. Such socioeconomic impacts could ripple through the general economy. For example, people relying on fruits for food, animal feed, fuel, or other uses may have to pay more as the local supply of fruits decreases relative to demand, or as local supply must be supplemented by potential fruit imports. The cost of fruit fly host commodities may increase due to transportation and handling of imported/exported commodities, and the consequential increase in commodity products, international trade, may cause delays in trade and consumer pricing. Other examples of possible effects through the local and regional economy, and on international trade could include:

- Affected farmers and farm business owners (such as fruit producers, owners of organic farm operations and farm markets, transportation and food service providers) may no longer be able to participate in the local economy, afford to purchase homes, health insurance, or pay tuition for their children's education.
- Local producers could lose funding if farm business owners moved away in search of better economic conditions.
- Abandoned and deteriorating properties could result in an increase of plant pest diseases, pest prevalence, and public health concerns.
- The poverty rate in the Medfly-infested region may increase with a potential unemployment rise and income loss from the lack of a Medfly control program.

The implementation of APHIS' proposed action (preferred alternative) in alignment with VIDA is expected to eradicate the Medfly outbreak on St. Croix and contribute to maintaining a Medfly-free human environment (including protected natural areas featuring native and naturalized fruit trees susceptible to Medfly, e.g., Salt River Bay National Historical Park and Buck Island Reef National Monument, and agriculture, e.g., large farms such as Cruzan Gardens, Greenridge Guavaberry, Ridge to Reef Farm, ARTfarm, and various small-scale operations growing tropical mangoes, passion fruit, tamarind, avocado, soursop, breadfruit, and sugar apples, often sold at local farmers' markets). APHIS' proposed action is not anticipated to pose any safety concerns or public health risk because of the low exposure potential to Program activities and adequate toxicity profile for the selected chemicals.

APHIS complies with the January 2025 presidential executive orders (EOs), including EO 14154 entitled "Unleashing American Energy," EO 14148 entitled "Initial Recissions of Harmful Executive Orders and Actions," and EO 14173 entitled "Ending Illegal Discrimination and Restoring Merit-Based Opportunity," which revoked several EOs related to, among other topics, climate change, environmental justice, and racial equity. Also, in compliance with EO 13045 ("Protection of Children from Environmental Health Risks and Safety Risks"), Program

personnel would not apply chemical treatment in schools, playgrounds, or other youth-frequented facilities that could raise safety concerns.

The proposed Program would be unlikely to impact transportation systems (e.g., no road blockage of traffic), social events (e.g., no disturbance of community gatherings, leagues, etc.), or local economy (such as jobs and businesses). Program personnel would notify property owners where Medflies are found and fully engage potentially affected communities. Residents would be advised on how to avoid chemical exposure during treatment and trap maintenance.

Given the language diversity on USVI (e.g., Spanish, French, English, Danish, Arabic, and Creole dialects), where the Hispanic community constitutes over 18% of the population and where more than 30% of residents speak other languages than English, Program personnel would ensure compliance with EO 13166 ("Improving Access to Services for persons with limited English proficiency") by notifying the public in both English and local languages (e.g., Spanish, and others as applicable) using translators, as needed, to ensure the communication is timely and clearly understood by the various communities of St. Croix, USVI.

Overall, the APHIS cooperative fruit fly eradication program actions are aimed at protecting agricultural interests, the U.S. economy, and international trade. If the Medfly populations establish in the Program area, APHIS expects substantial adverse economic effects on crop producers, processors, shippers, and consumers by way of commodity scarcity, higher costs for production and purchase, agricultural land abandonment, and the temporary or permanent loss of domestic and foreign markets for U.S. grown commodities via restricted trade. Insecticide use would likely increase to protect crops in the event of further establishment of Medfly outbreak, the likelihood of potential adverse effects of pesticide use on consumers would increase along with risk of pesticide resistance in Medfly. Based on regional data and APHIS models for similar tropical environments, the establishment of exotic fruit flies on St. Croix may result in annual crop losses exceeding 25% to 50% for local growers, while triggering millions in regional export losses due to strict quarantine requirements (UF-IFAS 2016). Furthermore, farmers would face a significant spike in operational costs for mandatory pesticide bait treatments to maintain even basic market access. More broadly, the shift in production practices needed to grow produce in the presence of exotic fruit flies would disrupt the pest management practices for other plant pests (Bernstein 2023).

Registered Historic Sites

The National Historic Preservation Act of 1966, as amended (16 USC 470 et seq.), requires federal agencies to consider the potential effect of their proposed actions on properties on, or eligible for inclusion on, the National Register of Historic Places (NRHP) as defined in 36 CFR parts 63 and 800.

According to the National Park Service (2026), St. Croix features 45 NRHP listings, comprising 13 historic districts and 32 individual properties. Site-specific spatial analysis indicates that six of these listings fall within or immediately adjacent to the primary program area, defined as a 1.5-mile radius around the Medfly detection site. Specifically, four resources are located within the inner core treatment area: the La Grande Princesse School (0.12 miles west-southwest), the

Estate Little Princess (0.27 miles east-northeast), the Estate St. John (1.24 miles west-northwest), and the Richmond Prison Detention and Workhouse (1.33 miles southeast). The Christiansted Historic District and Sion Hill are situated along the outer margin of this boundary at approximately 1.48 miles east-southeast and 1.60 miles southwest, respectively.

To ensure compliance with Section 106 of the National Historic Preservation Act, the Program would enforce a strict multi-tiered mitigation framework developed in consultation with the USVI SHPO to safeguard these sensitive cultural landscapes. Avoidance and minimization measures dictate that no high-pressure ground chemical sprays, aerial applications, or heavy mechanical vehicle staging would occur within a designated 500-foot exclusion buffer (APHIS 2023b) surrounding the legal boundaries of these properties, preventing chemical deposition on porous historic surfaces such as coral stone and lime mortar. Any necessary suppression activities in the immediate vicinity of these sites would rely exclusively on low-impact, precision tactics, including ground-based, target-specific bait stations, manual traps, or the release of sterile insects, to completely eliminate the risk of aerial drift, chemical discoloration, or accelerated material decay. Furthermore, if treatments are required near sensitive structures, temporary, non-reactive protective coverings would be deployed over vulnerable architectural features. Finally, APHIS personnel would coordinate field operations directly with local St. Croix historic preservation officers and property managers to schedule activities outside of public visiting hours, minimizing noise or auditory disruptions to the visitor experience, and would conduct post-treatment inspections to verify that no long-term degradation of historic building fabrics has occurred.

Likewise, if APHIS learned of an archaeological resource in an active treatment area on St. Croix, the agency would immediately notify the property owner and the USVI SHPO.

APHIS fruit fly program activities are generally compatible with the preservation of historic properties because they are discreetly integrated into the landscape and involve minimal disturbance. Control measures usually do not require noisy equipment or activities that necessitate auditory protection, and ground disturbance is usually negligible. Any visual, atmospheric, or auditory effects from chemical applications are often limited in duration, intensity, and scope. The proposed St. Croix Medfly Program would not alter, modify, relocate, abandon, or destroy historic buildings, structures, or infrastructure. Therefore, implementing the preferred alternative would not directly or indirectly affect the characteristics that qualify a property for inclusion in the NRHP. Treatments would not impact human-made structures, and Program activities would be conducted on an as-needed basis with flexibility to reduce pesticide use where appropriate.

There may be a few registered historic properties located outside of the treatment area, but within the quarantine boundary. However, because they are outside of the treatment area, no effect is expected. If in the future the treatment area extends to an NRHP site, no St. Croix Medfly Program chemicals or traps would be applied to such listed properties. Likewise, if Medfly-hosting vegetation should occur within the property line of the structure, the Program would contact the USVI SHPO prior to any treatments there. Because of these design criteria, the implementation of the proposed action is not expected to affect any NRHP-listed properties in the Program area.

Reasonably Foreseeable Effects

NEPA (42 USC § 4321 *et seq.*) requires that agencies consider reasonably foreseeable environmental effects of the proposed agency action. Such reasonably foreseeable effects may include effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Such effects can also result from actions with individually minor but collectively substantial effects taking place over a period of time.

Overall, APHIS expects limited potential for pesticide interaction or for multiple exposures. The St. Croix Medfly Program would coordinate with other pest programs on St. Croix to avoid any overlap of pest eradication treatments, and potential synergistic adverse environmental effects. APHIS does not know the types, amounts, or methods of delivery of pesticides used by private entities in the proposed Program area. Despite this, APHIS does not expect there to be significant additive or synergistic effects because of implementing the preferred alternative or its component treatment measures based on the very limited amount of pesticide used by the St. Croix Medfly Program. Under the preferred alternative, Program pesticide applications are designed to avoid overlapping treatment cores, and to prevent nontarget exposure until pesticide residues degrade. Therefore, APHIS did not identify any reasonably foreseeable future actions that could result in incremental increases in environmental effects.

In terms of fruit removal, host surveys, sterile insect releases, and trap placements, APHIS did not identify any reasonably foreseeable future actions that could result in incremental increases in environmental effects. In terms of chemical applications, APHIS expects limited to no potential for pesticide interaction or for multiple exposures. The St. Croix Medfly Program would coordinate with similar pest control programs to avoid overlap of pesticide applications and to limit potentially disruptive activities. Program personnel would adjust operations for changing conditions. Below are factors that APHIS considered when evaluating the Program's pesticide use for potential aggregate effects.

- Depending upon local jurisdiction and vulnerable nontarget populations, other fruit fly control programs within or near the St. Croix Medfly Program area may employ the same or similar chemical treatments to those described in this document; treatments are coordinated so as not to overlap.
- Under the preferred alternative, VIDA's Medfly control activities on the island of St. Croix would be incorporated in APHIS' proposed Medfly quarantine and eradication program for the island. Current and future Medfly control programs could merge into one larger program, depending on fruit fly dissemination and weather influences. APHIS expects that Program use of *Ceratitis* trapping and the proposed eradication actions in Christiansted would have beneficial effects: from the reduction in exotic fruit fly populations causing damage to fruit, and from overall reductions in pesticide treatments.
- Caribbean islands have a long history of species introductions, whether airborne, seaborne, or hitchhiking on cargo and people. A list of nonnative plant pests and diseases

on St. Croix appears in Appendix E. The USVI has experienced species extinctions and declines in biodiversity due to invasives, particularly on St. Croix (USVI Division of Fish and Wildlife 2026). APHIS considered implementation of the preferred alternative in the context of, and in conjunction with, other pest management projects that might occur in the St. Croix Medfly Program area (such as deer, iguana, rodent, weevil, Africanized honeybee, and mosquito control efforts) (Government of the U.S. Virgin Islands 2026; USVI Division of Fish and Wildlife 2026).

APHIS does not expect significant additive or synergistic effects from pesticide use by these pest management projects, due to differences in pesticide mechanisms of action, targets for pesticide application, affected species and resources, and application timing. Certain pest control programs currently active in the proposed Program area may apply the same or similar chemical treatments (including, but not limited to, spinosad formulations and MB fumigation). APHIS and VIDA would require commodity treatments and compliance agreements to allow the movement of regulated hosts and host material outside the St. Croix Medfly Quarantine.

APHIS foresees no aggregate impacts from cooperative Medfly program activities currently taking place in California, Florida, Puerto Rico, and the USVI because APHIS maintains ongoing program coordination with its partners (e.g., state Departments of Agriculture).

At the time of preparation of this document, in addition to the Medfly quarantine proposed for the island of St. Croix, there are active tephritid fruit fly quarantines in San Juan Municipality, Puerto Rico (targeting Medfly), southern Texas (targeting two *Anastrepha* spp.) and southern California (targeting *Anastrepha ludens*).

- APHIS and the State of California ended a 241-square-mile Medfly quarantine in Alameda and Santa Clara Counties on August 11, 2026, after successfully eradicating the Medfly infestation there (APHIS 2026d).
- On June 29, 2015, APHIS and the Puerto Rican Department of Agriculture removed a Medfly quarantine from the Cabo Rojo region after successful eradication of the Medfly infestation (APHIS 2015c). Chemical residues from cooperative fruit fly eradication programs degrade over time in the prevailing weather conditions in the Caribbean, so it is highly unlikely that pesticide applications from the Cabo Rojo Medfly Program would have additive or synergistic effects with applications by the St. Croix Medfly Program.

APHIS conducts ongoing surveillance for exotic fruit flies in U.S. Caribbean territories (C. Marzolf, personal communication, 2026-09-16). Delimitation trapping grids are centered on confirmed tephritid fruit fly detection sites. Trapping and host surveys for the presence of tephritid fruit flies in the USVI are managed by APHIS and conducted by APHIS personnel (C. Marzolf, personal communication, 2026-09-16). Adverse environmental effects have not been reported nor are they expected to occur from these actions.

The design criteria of the proposed St. Croix Medfly Program help protect the human environment. VIDA program officials would coordinate with St. Croix Medfly Program officials to ensure there is no overlap of chemical applications and a minimum of vehicular traffic.

Despite a minor improvement in groundwater depth, severe to extreme drought conditions continue in the proposed Program area (NDMC 2026a). The St. Croix Medfly Program would schedule chemical treatments, sterile insect releases, use of official vehicles, and other Program activities to minimize danger to human health and prevent the release of pollutants to water resources and the general environment.

Pesticides are used extensively for controlling agricultural and backyard pests throughout the Caribbean region. Residues are encountered on food, drinking water, public places, and gardens. IPM strategies may fail when island agriculture is being rebuilt after storms (University of Puerto Rico-Mayaguez 2025). APHIS does not have access to records listing all the types and amounts of pesticide used by private entities in the proposed Program area. Despite this information gap, APHIS does not expect implementation of the preferred alternative with its component treatment measures to result in significant additive or synergistic effects with private uses, because of the very limited amounts of pesticide applied by the Program. Under the preferred alternative, St. Croix Medfly Program would avoid overlapping pesticide applications and be timed to prevent nontarget exposure until pesticide residues degrade.

4 Agencies Contacted

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine
Emergency and Domestic Programs—Specialty Crops and Cotton Pests
5601 Sunnyside Avenue
Beltsville, MD 20705

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine
State Plant Health Director
654 Munoz Rivera Avenue
Plaza Building., Suite 700
San Juan, PR 00918

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Policy and Program Development
Environmental and Risk Analysis Services
5601 Sunnyside Avenue
Beltsville, MD 20705

U.S. Virgin Islands Department of Agriculture
St. Croix Office
1 Estate Lower Love
Kingshill, VI 00850

5 Certifying Statement for Page Limit and Deadline

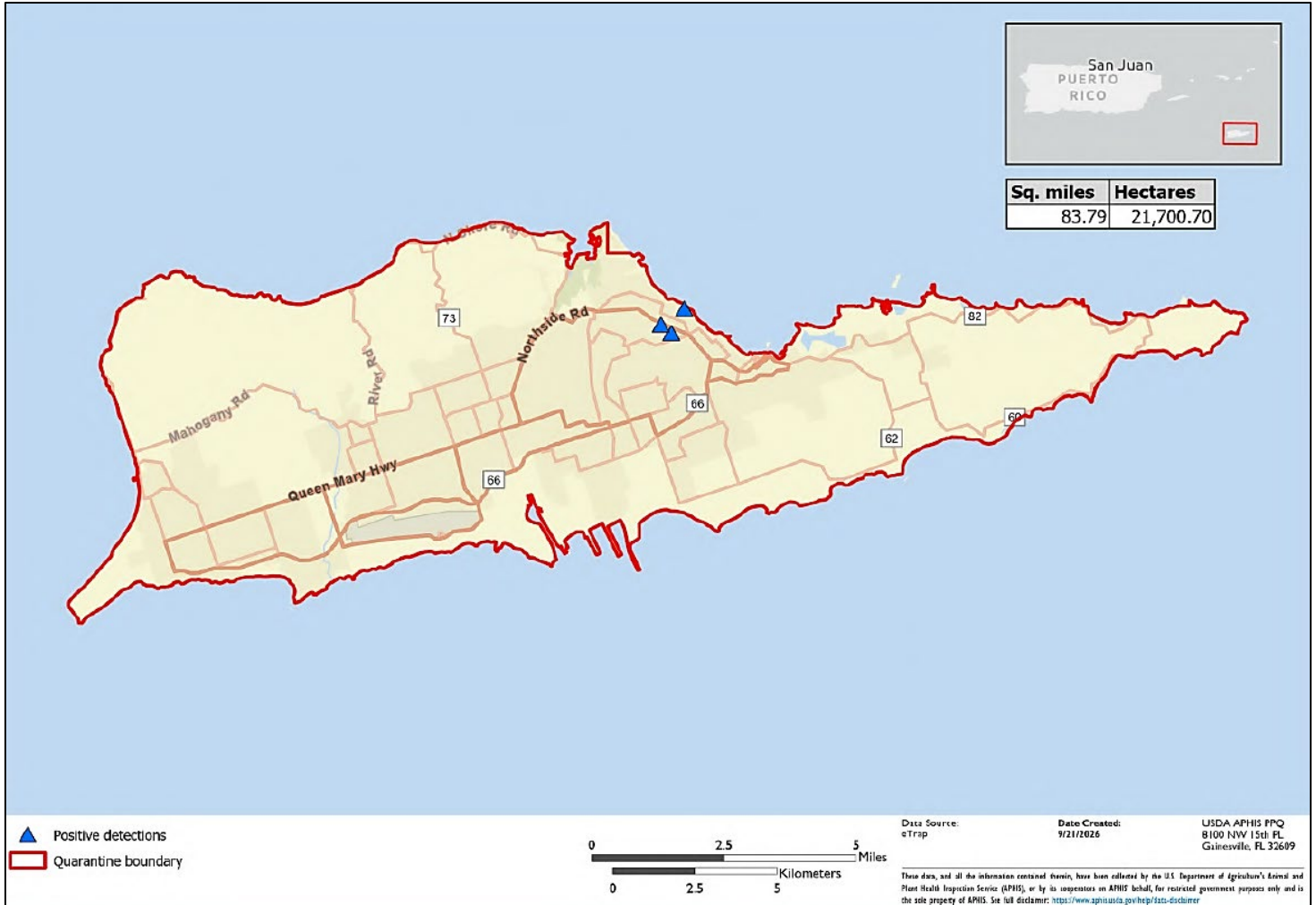
The Responsible Official named below certifies that this EA:

- ☒ Demonstrates the agency has thoroughly considered the factors mandated by NEPA
- ☒ Represents the agency's good-faith effort to prioritize documentation of the substantive issues and most important considerations required by NEPA within the congressionally mandated page limits
- ☒ Reflects the agency's expert judgment
- ☒ Addressed briefly, or left unaddressed, any issues or considerations that were, in the agency's judgment, comparatively not of a substantive nature
- ☒ Represents the agency's good-faith effort to fulfill NEPA's requirements within the Congressional timeline (or within the minimally extended timeline) and this effort is substantially complete; and
- ☒ Contains analysis that is adequate to inform and reasonably explain the responsible official's final decision regarding the proposed action or selected alternative.

Certified by:

Tina Gresham
Acting Director, Specialty Crops and Cotton Pests
Emergency and Domestic Programs
Plant Protection and Quarantine
Animal and Plant Health Inspection Service
U.S. Department of Agriculture

Appendix A. *Ceratitis capitata* (Mediterranean fruit fly) in St. Croix, U.S. Virgin Islands



Medfly detection sites and the proposed St. Croix Medfly Quarantined Area.

Map source: USDA APHIS

St. Croix: Christiansted and Salt River Bay



The island of St. Croix, USVI.

Map source: <https://www.stcroixtourism.com/images/stcroixmap.pdf>

Appendix B. Geospatial Data Resources Used for Environmental Analysis

Web-Based Mapping Applications for Environmental Assessments

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Appendix C. Approximate straight-line distances from Christiansted, St. Croix.

To Local Neighbors (USVI & Puerto Rico).

Destination	Approximate Distance
St. Thomas	43 miles (69 km)
St. John	40 miles (64 km)
Puerto Rico	75 miles (121 km) — To Vieques is ~50 miles; to San Juan is ~95 miles.

To the Contiguous United States.

Destination	Approximate Distance
Florida	1,110 miles (1,786 km) — To Miami.
Texas	2,030 miles (3,267 km) — To Brownsville).
California	3,450 miles (5,552 km) — To San Diego.

To Other International Borders.

Region	Nearest Country	Approximate Distance
Caribbean	British Virgin Islands (Tortola)	62 miles (100 km)
North America	Mexico (Cancún)	1,375 miles (2,213 km)
Central America	Honduras (Swan Islands)	1,060 miles (1,706 km)
South America	Venezuela (Punta Gallinas)	490 miles (788 km)

(Source: D. Smith, personal communication, 2026-02-12)

Appendix D. NRHP listings in St. Croix as of September 2026 by the National Park Service

National Register Historic Properties in St. Croix Medfly Treatment Area.

Historic property	NRHP reference number	NRHP listing date
La Grande Princesse School	76001847	July 12, 1976.
Estate Little Princess	80003995	June 9, 1980.
Estate St. John	78002718	June 9, 1978.
Richmond Prison Detention and Workhouse	78002720	February 14, 1978.
Christiansted Historic District	76002266	July 30, 1976.
Sion Hill	76001850	July 19, 1976.

(See Appendix B for NPS data source.)

St. Croix Island, USVI: NRHP-listed Historic Properties and Districts.

No.	Historic property or district	NRHP reference number	NRHP listing date
1	Aklis Archeological Site	76001852	July 1, 1976.
2	Bethlehem Middle Works Historic District	87001932	July 6, 1988.
3	Christiansted Historic District	76002266	July 30, 1976.
4	Christiansted National Historic Site	66000077	October 15, 1966.
5	Coakley Bay Estate	76001841	July 23, 1976.
6	Columbus Landing Site	66000743	October 15, 1966.
7	Danish West India and Guinea Company Warehouse	74001940	October 9, 1974.
8	Diamond School	76001842	July 1, 1976.
9	Estate Butler's Bay	78002722	August 25, 1978.

No.	Historic property or district	NRHP reference number	NRHP listing date
10	Estate Grove Place	78002721	July 17, 1978.
11	Estate Hogansborg	78002723	February 17, 1978.
12	Estate Judith's Fancy	78002717	July 17, 1978.
13	Estate La Reine	80003994	November 24, 1980.
14	Estate Little Princess	80003995	June 9, 1980.
15	Estate Mount Victory	78002724	February 17, 1978.
16	Estate Prosperity	78002725	February 17, 1978.
17	Estate Saint George Historic District	86003351	October 24, 1986.
18	Estate St. John	78002718	June 9, 1978.
19	Fair Plain Archeological District	76001843	September 29, 1976.
20	Fairplain Historic and Archeological District	87001903	July 6, 1988.
21	Fort Frederik	96001073	October 8, 1996.
22	Frederiksted Historic District	76001853	August 9, 1976.
23	Friedensfeld Midlands Moravian Church and Manse	76001844	July 1, 1976.
24	Friedensthal Mission	78002719	August 25, 1978.
25	Great Pond Archeological Site	76001845	July 12, 1976.
26	Green Kay	76001846	July 19, 1976.
27	Hams Bluff Light	100004382	September 16, 2019.
28	Holy Cross Episcopal Church	100010641	July 25, 2024.
29	Kingshill Lutheran Church	100010640	July 25, 2024.
30	La Grande Princesse School	76001847	July 12, 1976.
31	La Grange Historic District	100010647	July 29, 2024.
32	Little La Grange	76001854	October 22, 1976.
33	Lower Granard Archeological District	76001849	July 1, 1976.

No.	Historic property or district	NRHP reference number	NRHP listing date
34	Prosperity Archeological Site	76001855	July 12, 1976.
35	Richmond Prison Detention and Workhouse	78002720	February 14, 1978.
36	River Archeological Site	76001856	July 1, 1976.
37	St. Georges Archeological Site	76001857	September 29, 1976.
38	St. John's Episcopal Church	16000698	October 4, 2016.
39	Salt River Bay National Historic Site and Ecological Preserve ¹	01000280	February 24, 1992.
40	Sion Hill	76001850	July 19, 1976.
41	Slob Historic District	87001929	November 12, 1987.
42	Sprat Hall Historic District	100010646	July 29, 2024.
43	Strawberry Hill Historic District	87001934	October 2, 1987.
44	Upper Salt River Archeological District	76001851	September 1, 1976.
45	Whim	76001858	July 30, 1976.

(See Appendix B for NPS data source.)

Appendix E. St. Croix Plant Pests and Diseases and Their Hosts.

Introduced plant pests and diseases on St. Croix	Available hosts on St. Croix
Avocado root rot	<i>Persea</i> spp. (avocado)
Bacterial spot	<i>Capsicum</i> (pepper) and <i>Solanum</i> (tomato) spp.
Black agave weevil	<i>Agave missionum</i>
Brown/black citrus aphid	<i>Citrus</i> spp.
Citrus greening bacterium	<i>Citrus</i> spp.
Citrus leaf miner	Most <i>Citrus</i> spp. Frequently attacks <i>Bourreria succulenta</i> .
Citrus mealybug	<i>Croton</i> spp., <i>Cactus</i> spp. <i>Eurphorbia</i> spp. amongst others
Croton scale	90 spp. in 36 families. Most common incl. <i>Codiaeum variegatum</i> , <i>Bursera simaruba</i> , <i>Ficus</i> spp. and <i>P. guajava</i> .
Erythrina gall wasp	<i>Erythrina</i> spp.
EuMV virus	<i>Euphorbia</i> and <i>Datura</i> spp. Wild plants incl. <i>E. heterophylla</i> and <i>E. prunifolia</i>
Exotic soft scale	<i>Carica papaya</i> , most <i>Citrus</i> spp., <i>Annona</i> spp., <i>Croton</i> spp., <i>Bursera simaruba</i>
Grass scale	<i>Poaceae</i> , <i>Cyperaceae</i>
Guava rust disease	<i>Myrtaceae</i> family, incl. Guava (<i>Psidium</i> spp.), Eucalypt (<i>Eucalyptus</i> spp.), Rose Apple (<i>Syzygium jambos</i>), and Ohia (<i>Metrosideros polymorpha</i>)
Lime swallowtail	<i>Citrus</i> spp.
Mahogany shoot borer	<i>Meliaceae</i> , <i>Cedrela odorata</i>
Mango seed weevil	<i>Mangifera indica</i>
Mediterranean fruit fly	A wide variety of important economic fruit crops incl. mango, guava, citrus and papaya. Also many wild plant hosts incl. <i>Capparis</i> spp., <i>Opuntia</i> spp., and <i>Eugenia</i> spp.
Melon thrips	<i>Areceaceae</i> , <i>Cucurbitaceae</i>
Mole cricket	Turfgrass (<i>Poaceae</i>) spp.

Introduced plant pests and diseases on St. Croix	Available hosts on St. Croix
Opuntia cactus moth	<i>Opuntia</i> spp.
Palm mealybug	<i>Cocos</i> spp., <i>Roystonea</i> spp.
Panama disease of banana	<i>Hibiscus sabdariffa</i> , <i>Mimosa</i> spp., banana producing spp.
Papaya mealybug	<i>Acacia</i> spp., <i>Hibiscus</i> spp., <i>Plumeria</i> spp., <i>Carica papaya</i> , <i>Guazuma ulmifolia</i> , <i>Annona squamosa</i> , <i>Acalypha</i> spp. amongst others
Pink hibiscus mealybug	<i>Hibiscus rosasinensis</i> . Many spp. incl. ornamentals, citrus and other fruit trees, and crops such as beans, corn, cucumber, okra, pepper, pigeon pea, pumpkin, sorrel, sweet potato, tomato
Red imported fire ant	Habitat/association with <i>Poaceae</i> and <i>Fabaceae</i> . Known to girdle young citrus trees.
Red palm mite	<i>Areaceae</i> . High infestation in <i>Cocos nucifera</i>
Spider beetle	<i>Tournefortia gnaphalodes</i>
Tabebuia thrips	<i>Tabebuia heterophylla</i>
Tawny crazy ant	Preys on <i>Lepidoptera</i> , <i>Coleoptera</i> , <i>Isoptera</i> and <i>Hymenoptera</i> .
Tobacco budworm	<i>Gossypium barbadense</i>
West Indies mahogany scale	<i>Swietenia mahagoni</i> , <i>S. macrophylla</i> x <i>S. mahagoni</i> hybrid, <i>Coccoloba uvifera</i>

Source: (Van Bloem and Allerton 2018)

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Appendix G. Abbreviations and Acronyms in This Document

Abbreviation or Acronym	Meaning
A.	Fruit fly genus <i>Anastrepha</i>
ACHP	Advisory Council on Historic Preservation, a U.S. federal agency
APHIS	Animal and Plant Health Inspection Service, a USDA subcomponent
C.	Fruit fly genus <i>Ceratitidis</i>
CAA	The Clean Air Act
CDFA	California Department of Food and Agriculture
CFR	Code of Federal Regulations
DPNR	Department of Planning and Natural Resources
EA	Environmental Assessment
EO	Executive Order
ERS	Economic Research Service, a USDA subcomponent
FIFRA	The Federal Insecticide, Fungicide, and Rodenticide Act
GE	Genetically Engineered
GISD	Global Invasive Species Database
IAEA	International Atomic Energy Agency
IPaC	Information for Planning and Consultation (a USFWS project planning tool)
IPM	Integrated Pest Management
MB	Methyl Bromide
Medfly	Mediterranean Fruit Fly, <i>C. capitata</i>
NAAQS	National Ambient Air Quality Standards
NASS	National Agricultural Statistics Service, a USDA subcomponent
NDMC	National Drought Mitigation Center
NEPA	The National Environmental Policy Act
NMFS	National Marine Fisheries Service, a U.S. Department of Commerce subcomponent

Abbreviation or Acronym	Meaning
NOAA	National Oceanic and Atmospheric Administration, a U.S. Department of Commerce subcomponent
NPIC	National Pesticide Information Center
NPS	National Park Service, a U.S. Department of the Interior subcomponent
NRHP	National Register of Historic Places
PEIS	Programmatic Environmental Impact Statement
PM_{2.5}	Fine Particulate Matter
QPS	Quarantine and Pre-shipment
SHPO	State Historic Preservation Officer
SIT	Sterile Insect Technique
spp.	Species
U.S.	United States
UF-IFAS	University of Florida-Institute of Food and Agricultural Sciences
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service, a U.S. Department of the Interior subcomponent
USVI	Virgin Islands of the United States, a U.S. territory
USVIBER	U.S. Virgin Islands Bureau of Economic Research
USVIEDA	U.S. Virgin Islands Economic Development Authority
VIDA	U.S. Virgin Islands Department of Agriculture