

## **COMPATIBLE USE DETERMINATION**

**Use:** *Field Release of Pseudophilothrips ichini, (Thysanoptera: Phlaeothripidae), for Biological Control of Brazilian Peppertree, Schinus terebinthifolius*

**Refuge Name:** Lower Suwannee National Wildlife Refuge

**Location:** 16450 NW 31<sup>st</sup> Place, Chiefland, Levy County, Florida 32626

**County:** Levy County and Dixie County, Florida.

**Date Established:** April 10, 1979.

### **Establishing and Acquisition Authorities:**

- Fish and Wildlife Act of 1956 -- (August 8, 1956) [16 U.S.C. 1131-1136]
- Migratory Bird Conservation Act -- (February 18, 1929) [16 U.S.C. 667b]
- Real Property Transfer Act, PL 80-537 -- (May 19, 1948) [16 U.S.C. 742]
- Refuge Recreation Act, and amendments -- (September 28, 1962) and PL 93-205 (December Public Law 93-632, January 3, 1975)

### **Refuge Purpose:**

These purposes and the mission of the National Wildlife Refuge (NWR or Refuge) System (NWRS) are fundamental to determining the compatibility of proposed uses for the Lower Suwannee NWR.

The purposes of Lower Suwannee NWR are:

...” to protect, maintain, enhance, and where appropriate, restore habitats along the lower reaches of the Suwannee River.” (Lower Suwannee and Cedar Keys NWRs Comprehensive Conservation Plan 2001).

- “...for the development, advancement, management, conservation, and protection of fish and wildlife resources...” 16 U.S.C. § 742f(a)(4)\* and
- “...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...” 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956, 16 U.S.C. § 742f (a) Special Use Permit-754, as amended.

### **National Wildlife Refuge System Mission:**

"The mission of the NWRS is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Administration Act of 1966, as amended) [16 U.S.C. §668dd-668ee].

**(a) Description of Use:**

The Refuge is proposing to initiate a use that directly supports the purpose of the Lower Suwannee NWR and that of the NWRS. This use will allow the environmental release of an insect, *Pseudophilothrips ichini* (thrips), (Thysanoptera: Phlaeothripidae), on Refuge lands. Thrips will be used for the biological control of the noxious, invasive-exotic Brazilian Peppertree (BP), *Schinus terebinthifolius*, with the agent (insect) released directly on the actual invasive BP plants we intend to target. The U.S. Fish & Wildlife Service (USFWS) has adopted the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) *Pseudophilothrips ichini* Environmental Assessment (EA) that analyzed the potential environmental consequences of this action within the continental U.S (USDA May 2019).

For years the Refuge has aggressively addressed BP control with various methods (chemical, physical, and mechanical). These control methods will continue regardless of field release(s) for thrips. However, we feel that we cannot keep up with the spread of BP and therefore have seen this use as an opportunity to partner with the Florida Division of Agriculture and Consumer Services (DACs) Division of Plant Industry, and propose issuing a Special Use Permit (SUP) to allow this alternate method of invasive plant species control.

**(b) Where will the use be conducted?**

Thrips releases will be conducted on Lower Suwannee NWR's managed lands in Levy and Dixie Counties.

**(c) When will the use be conducted?**

We will determine, with out DACs partners, when this is convenient and feasible, and work this into a SUP.

**(d) How will the use be conducted?**

Refuge staff and DACS biologists (and potentially other partners) will go into the field and release the live thrips from their containers onto the BP plants. The thrips then go and do their thing and control BP.

**(e) Why is the use being proposed?**

Brazilian peppertree is one of the worst invasive species on the Refuge and in most of the State of Florida. The USDA EA (May 2019) analyzed the potential environmental consequences and the purpose and need for the proposed of this action. We concur with USDA's assessment and adopt this need as the USFWS served as a coordinating agency (Hall, C. and Thomas, B., Personal Communication).

BP invades our Refuge natural communities including pinelands, hardwood hammocks, salt marsh fringes, and mangrove stands. Attributes that contribute to its success as an invasive plant species include many (tasty to birds) berried fruit produced per female plant, and birds being very effective at dispersal. BP is also shade, fire, and drought tolerant. It has allelopathic effects on neighboring plants and a tolerance to salinity. To not aggressively act to control the invasion and displacement of native species by BP poses a serious threat to biodiversity and native species on the Refuge.

The Refuge has used chemical, mechanical, and physical control measures to control BP, but we feel we cannot keep up with this effort as BP continues to spread. There has been some success with these efforts, but permanent maintenance programs are required to prevent regrowth, which are costly, and labor intensive. For these reasons, we need to release host-specific, biological control thirps insect for the control of BP.

**Availability of Resources:**

The cost of allowing this use on the Refuge is absorbed within the Refuge's operating budget as the cost of lies mainly with the DACS. This use does not require additional staff for enforcement or other purposes save for Refuge staff accompanying the DACS personnel on the field releases. Within the operating budget, personnel time associated with administration and law enforcement, maintenance, and monitoring of sites for impacts are included and are expected to be nondetectable to negligible. Invasive species control is already a significant part of our operations with staff and volunteers.

*Resources involved in the administration and management of the use:* Personnel time associated with routine uses, such as administration, maintenance, and law enforcement, are involved, but to a very insignificant degree. Existing staffing and funding are currently adequate to support a thrips release, what we feel is a low to non-impacting activity. Refuge staff will direct this use as it occurs; any maintenance, administration, and management that is required regarding thrips release fits into our invasive species control program.

*Special equipment, facilities, or improvements necessary to support the use:*

The Refuge does not anticipate any special equipment, facilities, or improvements outside of our normal public use road and trail maintenance program to access to BP stands. The Refuge foresees the ability to aid as needed within our usual operating schedules, capacity, and infrastructure, as all are sufficient to support thrips releases.

*Maintenance costs:* The SUP'd thrips release applicants will be responsible for the eventual conditions and parameters under the permit but Refuge staff will be in attendance. Working with the thrips release applicants we would accompany them on the action and ensure that the SUP will specify conditions of use such as access routes, mode of access, specific areas of activity, and areas to target.

The thrips release will be prescribed in the SUP in an area that is infected with BP and without undue disturbance to field office operations and other public uses. There will be no permanent physical facilities constructed or located on our lands for the support of thrips release activities, save for modest thrips high-rise condos on our ponds. Thrips are small insects requiring little space, so we do not anticipate much construction involved with the thrips condos.

Maintenance costs are expected to be minimal or nonexistent from this this use on the Refuge. There are no expected increased costs to maintain Refuge infrastructure outside of other routine public uses on our road and trail network.

*Monitoring costs:* Refuge staff and volunteers will monitor costs and other impacts of the thrips releases. Monitoring and compliance requirements will be handled within existing resources, programs, and staff time.

*Offsetting revenues:* None required as this action will not cost the refuge any additional efforts or resources.

### **Anticipated Impacts of Use:**

*Short-term Impacts:*

There are no short-term impacts documented as a result of thrips releases on BP.

The following Long-term and Cumulative Impact section is quoted directly from the USDA May 2019 Environmental Assessment:

*Long-term Impacts:*

“ Potential impacts of *P. ichini* [thrips] on Brazilian peppertree are difficult to predict. Greenhouse studies showed that plant height and number of stems were reduced following thrips feeding, and plants were not able to recover after 2.5 months (in 2019 USDA EA: Manrique et al., 2014). In its native Brazil and in the laboratory environment, feeding leads to plant tips wilting followed by tip death. These damaged tips will not flower or produce fruit until the plant can direct resources again to produce fresh foliage. As Brazilian peppertree is not known to reproduce vegetatively, decreasing the sexual reproduction will reduce the number of seeds, and thus, seedlings produced. This same type of damage occurred with the successful release of the *Melaleuca quinquenervia* biological control agent *Oxyops vitiosa* where tip damage by the agent prevented the weed’s ability to regenerate and reinvade (in 2019 USDA EA: Center et al., 2012). The thrips may also increase the plant’s susceptibility to disease and abiotic stresses.”

The uncertainties regarding release of *P. ichini* are the same as those for release of *C. latiforceps*. Actual impacts on Brazilian peppertree by *P. ichini* will not be known until after release occurs and post-release monitoring has been conducted (see appendix 6 for release protocol and post-release monitoring plan for *P. ichini*). However, it is expected that *P. ichini* will reduce plant height and number of stems of Brazilian peppertree. It may also reduce the number of seeds, and thus, seedlings produced.

The gradual reduction of Brazilian peppertree by *P. ichini* may be beneficial to wildlife and domestic animals including white-tailed deer, the Florida panther, migratory birds, horses, and cattle. *Pseudophilothrips ichini* is a plant-feeding insect and poses no risk to wildlife species. Reduction of Brazilian peppertree by *P. ichini* would be beneficial for human health by reducing the leaves, fruit, and sap of Brazilian peppertree that are known to be toxic to or cause dermatitis and edema in humans.

*Pseudophilothrips ichini* would reduce (but not eliminate) the presence of Brazilian peppertree in the environment; thus, it would still be available for beneficial uses, including honey production, herbal medicine, as a spice, and as an ornamental planting. However, it may cause damage to ornamental plantings of Brazilian peppertree and to a lesser extent, *Schinus molle*.”

*Cumulative Impacts:*

“Other private and public concerns work to control Brazilian peppertree in invaded areas using available chemical, mechanical, physical, and biological control methods. Release of *P. ichini* is not expected to have any negative cumulative impacts in the contiguous United States because of its host specificity to Brazilian peppertree. Effective biological control of Brazilian peppertree will have beneficial effects for Federal, State, local, and private weed management programs, and may result in a long-term, non-damaging method to assist in the control of Brazilian peppertree in the contiguous United States.”

No cumulative impacts (reasonably certain to occur but occurring later in time) are anticipated from this use; however, the Refuge will work with the DACS, Florida Fish and Wildlife Commission, and with the University of Florida’s Wildlife Ecology and Conservation department to monitor this use.

**Public Review Comment:**

A 30-day public review and comment period will begin on 23 June 2020 and will end on 24 July 2020. Copies of the document will be displayed in the [Lower Suwannee and Cedar Keys National Wildlife Refuges office](#); please call for an appointment: 703.622.3896. The document will also be available on the [Lower Suwannee National Wildlife Refuge website](#), the [Friends of the Lower Suwannee and Cedar Keys National Wildlife Refuges website](#), and distributed to local news outlets: Cedar Key News, Gainesville Sun, Dixie County Advocate, and the Chiefland Citizen.

**Determination:**

Use is Compatible with Following Stipulations

Use is Not Compatible

**Stipulations Necessary to Ensure Compatibility:**

As reviewed and endorsed by the Regional and National Invasive Species Coordinators, we seek Regional Office-level endorsement prior to the issuance of a SUP by the Lower Suwannee NWR to allow FDACS to release thrips to control BP under a Refuge-issued SUP.

**Justification:**

Lower Suwannee NWR already conducts extensive and costly (in staff time, capacity, equipment, chemicals, and maintenance support) invasive plant species removal through mechanical, physical, and chemical treatments; both with staff and with volunteers. The [Refuge's 2001 Comprehensive Conservation Plan's](#) (CCP) Wildlife Strategy 1.1.11 identifies invasive species control as a management priority which we have been doing for years, as are most Florida NWRs and State-managed lands. For land managers in Florida BP control effort is a standard part of pro forma operations.

After fully considering the impacts of this activity, it is the Refuge's determination that this use will not materially interfere with or detract from the purposes of the Refuge(s) or the mission of the Refuge System, rather is directly supports the mission of both the NWR System and that of the Lower Suwannee NWR's purpose to restore habitats. These activities will remain compatible with the implementation of the listed stipulations.

This Compatibility Determination is based on sound professional judgement and the best available science.

This use complies with Department of the Interior policy as follows:

- Department of the Interior Policy 516 DM 8.5 B (7) Categorical Exclusions: Minor changes in the amounts or types of public use on Service or State-managed lands, in accordance with existing regulations, management plans, and procedures.

**NEPA Compliance for Refuge Use Description:**

<u>  X  </u>	Categorical Exclusion without Environmental Action Statement
<u>      </u>	Categorical Exclusion and Environmental Action Statement
<u>      </u>	Environmental Assessment and Finding of No Significant Impact
<u>      </u>	Environmental Impact Statement and Record of Decision

**Mandatory 10-year Re-evaluation Date:** May 2030

**Supporting References:**

2001. Lower Suwannee and Cedar Keys NWRs Comprehensive Conservation Plan. USFWS NWRS, Atlanta, Georgia.

2014. Global Invasive Species Database. 2014. *Schinus terebinthifolius*. Available online at: <http://www.iucngisd.org/gisd/>.

2019. Regulations.gov: Notice of Availability of an Environmental Assessment for the Release of Biological Control of Brazilian Peppertree. Docket ID: APHIS-2018-0075. USDA APHIS. Available online at: <https://www.regulations.gov/docketBrowser?rpp=50&so=DESC&sb=postedDate&po=0&dct=PS&D=APHIS-2018-0075>.

February 2019. USDA, Federal Register: Notice of Availability of an Environmental Assessment for the Release of Biological Control of Brazilian Peppertree, A Notice by the APHIS on 02/27/2019. APHIS, USDA. Available online at: <https://www.federalregister.gov/documents/2019/02/27/2019-03322/notice-of-availability-of-an-environmental-assessment-for-the-release-of-biological-control-of>.

April 2019. USDA, Marketing and Regulatory Programs, APHIS Decision and Finding of No Significant Impact for Field Release of the Insects *Caloptya latiforceps* (Hemiptera: Calophyidae) and *Pseudoptilotrips ictini* (Thysanoptera: Phlaeothripidae) for Classical Biological Control of Brazilian Peppertree in the Contiguous United States

May 2019. USDA, [Environmental Assessment: Field Release of the Insects \*Calophya latiforceps\* \(Hemiptera: Calophyidae\) and \*Pseudophilothrips ichini\* \(Thysanoptera: Phlaeothripidae\) for Classical Biological Control of Brazilian Peppertree in the Contiguous United States](#). Plant Protection and Quarantine, Animal and Plant Health Inspection Service, U.S. Department of Agriculture, Riverdale, Maryland.

USDA, APHIS website; Summary:

[http://www.aphis.usda.gov/plant\\_health/ea/biocontrol\\_weeds.shtml](http://www.aphis.usda.gov/plant_health/ea/biocontrol_weeds.shtml); *Pseudophilothrips ichini* Materials: <https://usdasearch.usda.gov/search?utf8=%3F&affiliate=usda-aphis&query=Pseudophilothrips+ichini&commit=Search>.

July 2019. CBS TV Channel 4, Miami News, Davie, Florida; “Tiny Bugs Being Used To Fight Invasive Brazilian Peppertree In South Florida: <https://miami.cbslocal.com/2019/07/16/tiny-bugs-being-used-to-fight-invasive-brazilians-peppertree-in-south-florida/>. July 16, 2019 at 6:05 pm. Link: <https://miami.cbslocal.com/2019/07/16/tiny-bugs-being-used-to-fight-invasive-brazilians-peppertree-in-south-florida/>.



October 2019. National Public Radio All Things Considered. “Florida Researchers Use Pests to Help Control Pesky Brazilian Peppertree Plant”, October 30, 2019 12:00 PM ET.

Available online at: <https://www.npr.org/2019/10/30/774415087/florida-researchers-use-pests-to-help-control-pesky-brazilian-peppertree-plant>.

April 2020. Hall, Cindy and William Thomas. National Invasive Species Coordinator and Southeast Region Invasive Species Coordinator, U.S. Fish & Wildlife Service, National Wildlife Refuge System, Washington, D.C. and Boynton Beach, Florida; personal communication.

May 2020. Steiniger, Sedonia; Biological Scientist, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, Florida. Email personal communication 7 May 2020.