

**United States Fish and Wildlife Service
Section 10(a)(1)(A) Scientific Permit Requirements
For Conducting Houston Toad Presence/Absence Surveys**

U.S. Fish and Wildlife Service, Austin Ecological Services Field Office
10711 Burnet Road, Suite 200, Austin, Texas
(512) 490-0057

This document provides guidance on when you might be at risk of “taking” a Houston toad while conducting presence/absence surveys and when it is advisable to have a Section 10(a)(1)(A) permit issued by the Service under the Endangered Species Act of 1973, as amended (Act) to be covered for “take.” The ultimate decision to apply for a permit is yours. Individuals engaged in activities that have the potential to “take” listed species are responsible for determining whether the likelihood of “take” is great enough to need a section 10(a)(1)(A) permit (see *When a Section 10(a)(1)(A) Scientific Permit is Needed* below for the definition of “take”).

If you choose to apply for a permit, this document outlines the U.S. Fish and Wildlife Service’s (Service) process and requirements for conducting presence/absence surveys for the federally listed endangered Houston toad as conditions of holding a section 10(a)(1)(A) permit. Section 10(a)(1)(A) permits, also referred to as recovery, enhancement of survival, or scientific permits, allow for “take” of listed species that may or will occur while conducting research to further the recovery of a listed species (see *When a Section 10(a)(1)(A) Scientific Permit is Needed* below). This document outlines methods to be used and information to be included in annual reports for a section 10(a)(1)(A) permit.

The objective of this document is to identify survey methods that will produce sound scientific information upon which to base decisions and actions for the conservation of the Houston toad. Using consistent survey methodology will also allow for greater comparison and analysis of results, and thereby increase our understanding of this species and its habitat requirements. Please note that this document supersedes any previous guidance from the Austin Ecological Services Office on conducting presence/absence surveys for the federally endangered Houston toad. Information that relates to the effectiveness of these survey guidelines in conserving the Houston toad is welcome. We will consider modifications of, or alternatives to, these methods and qualifications on a case-by-case basis.

When a Section 10(a)(1)(A) Scientific Permit is Needed

Collecting endangered species is a form of “take,” and therefore is prohibited under section 9 of the Endangered Species Act of 1973, as amended, unless the “take” is covered under a Section 10(a)(1)(A) scientific permit. “Take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” In addition to collecting, forms of “take” that could occur in the process of conducting Houston toad surveys include crushing individuals; compaction of

habitat and oviposition sites; disturbance of cover objects; harm or harassment that may occur with the introduction into the environment of noise, light, chemicals, and biological substances, and possibly other actions that would cause individuals to flee, seek shelter, or alter or cease normal foraging, anti-predation, or reproductive behavior. For information on how to apply for a 10(a)(1)(A) permit, contact the Region 2 Permits Office at (505)-248-6663 or access the application form directly at <http://www.fws.gov/forms/3-200-55.pdf>.

Requirements for Conducting Presence/Absence Surveys for the Houston Toad

Sampling Diligence and Thoroughness

To ensure adequate coverage of a project area, a system of grids or transects, with listening stations separated by 1/4 mile or less, should be established throughout all areas (where access is allowed) that support suitable Houston toad habitat.

Surveyors should be familiar with anuran calls and taxonomy, and should be able to independently recognize the Houston toad call. Surveyors should possess a tape/digital recorded call of the Houston toad for reference.

Surveyors should be careful to avoid disturbing toads when approaching a suspected breeding site (for example, surveyors should avoid bright lights and noise). Assuming no disturbance has occurred, surveyors should spend at least five minutes at each listening stop, under quiet conditions. If no toads are heard during that time, a visual search for toads should be made if access to the chorus site is available.

Each suspected Houston toad breeding site where Houston toads are not heard chorusing should be inspected for egg strands, tadpoles, and toadlets.

A tape or digital recording of the Houston toad call should be used to try to elicit Houston toad chorusing at each suspected Houston toad breeding site if Houston toads are not heard chorusing during the initial five minute listening period.

Number of Sampling Occasions

Surveyors are required to conduct a minimum of six visits to each five minute listening post during one breeding season to infer absence of the Houston toad from a site. However, available information indicates that 12 visits to a five minute listening post during one breeding season may be necessary to provide a reasonable probability of detecting Houston toads when the species is actually present at a location (Jackson et al 2006). If surveyors make less than 12 visits to each listening post during one breeding season, an explanation should be provided in the annual report as to how or why their number of visits was chosen.

A minimum of three years of surveys may be necessary to infer the absence of Houston toads from a site, depending on annual weather conditions and toad activity.

Suitable Sampling Conditions

Ideally, the survey effort should be spread out over the peak of the breeding season (February-April).

Surveys shall be conducted when temperatures are found to be at or above 57 degrees Fahrenheit.

Surveys may also be conducted when moisture-laden Pacific fronts occur that bring rain but do not lower air temperatures below 57 degrees Fahrenheit.

Surveys may begin about 30 minutes after sundown and should end if, and when, a significant drop in temperature occurs.

In addition to temperatures above 57 degrees Fahrenheit, other weather conditions that may stimulate Houston toad chorusing may include:

- humidity greater than 70 percent,
- cloud cover present or moon not full, and
- rainfall or recent rainfall (occurring within the previous 24 hours).

To maximize the surveyor's hearing ability, surveys should be conducted when wind speeds are less than 15 miles per hour.

Reporting

Annual reports are **required** by all section 10(a)(1)(A) permittees. Survey reports must include the following information:

Personnel

- Names of all persons involved in the surveys and their duties
- The section 10(a)(1)(A) scientific report number under which work was conducted
- Person(s) directly responsible for writing the report

Location

- Locations of suspected breeding sites surveyed and the property boundaries on either a U.S. Geological Survey quad map (7.5 minute or larger scale) or, if possible, in a GIS (Geographic Information System) layer with georeferenced survey location data (using global positioning system (GPS)), including references, such as road names and political boundaries
- General description of the geology, soils, vegetation, and land use of each area surveyed

Weather Conditions

- Documentation of weather data (including copies of monthly weather summaries obtainable from the State Climatologist or local weather stations for each survey conducted)
- Recorded data on air temperature (to the nearest one degree Fahrenheit), humidity (to the nearest one percent), precipitation, wind speed, cloud cover, and moon phase at the suspected breeding sites for each survey night conducted

Methods

- Survey methodology descriptions using standards consistent with a scientific, peer-reviewed publication
- Dates and times of each survey conducted
- Number of visits made to each five minute listening post and an explanation as to how or why this number of visits was chosen, if sites were visited less than 12 times
- Documentation that Houston toad call tapes were played at sites where Houston toads were not detected

Survey Results

- Both **positive and negative survey results** for each survey conducted on each survey route in each survey area on a map or in a GIS layer, as described above
- Locations of potential or known breeding sites (water features) surveyed on a map or in a GIS layer, as described above
- Approximate number of Houston toads detected at each survey site
- Notable observations of habitat conditions at potential or known breeding sites
- Notable observations on Houston toad behavior when surveyed

Literature Cited

Jackson, J.T., F.W. Weckerly, T.M. Swannack, M.R.J. Forstner. 2006. Inferring absence of Houston toads given imperfect detection probabilities. *Journal of Wildlife Management* 70: 1461-1463.