

**Pacific Southwest Region (Region 8) and Pacific Region (Region 1)**  
**Minimum Qualifications for Obtaining and Maintaining a Section 10(a)(1)(A) Recovery Permit**  
**for Conducting Surveys for the Listed Large Branchiopod Species**

Conservancy fairy shrimp (*Branchinecta conservatio*), Longhorn fairy shrimp (*Branchinecta longiantenna*),  
Riverside fairy shrimp (*Streptocephalus woottoni*), San Diego fairy shrimp (*Branchinecta sandiegonensis*), Vernal  
pool fairy shrimp (*Branchinecta lynchi*), Vernal pool tadpole shrimp (*Lepidurus packardii*)

**Effective Date: January 23, 2017**

Section 9 of the ESA prohibits “take” of federally listed species. For this reason, a Section 10(a)(1)(A) Recovery Permit (permit) is required to conduct surveys for federally listed large branchiopod species<sup>1</sup> (hereafter, listed branchiopods) because survey activities may result in the purposeful “take” (e.g., handling, collection, and vouchering) of these species and their resting eggs. Unless otherwise specified by the appropriate Fish and Wildlife Office, surveys will be conducted using the most recent U.S. Fish and Wildlife (Service) “Survey Guidelines for the Listed Large Branchiopods.”

The Service may authorize one or more of the following activities pursuant to the permit for individuals who meet the minimum qualifications as described herein:

**Surveys to determine presence/absence of listed branchiopods:**

1. Wet season surveys for determining the presence/absence of adult branchiopods throughout the entire geographic range of branchiopods where they occur in California and southern Oregon, and
2. Dry season collection of soil substrate (soil) for determining the presence of branchiopod eggs throughout the entire geographic range of branchiopods where they occur in California and southern Oregon.

**Specialized permit activities:**

1. Sieving of soil, sorting, and microscopic identification of branchiopod eggs from soil samples collected during dry-season surveys.
2. Sieving, sorting, and identification of branchiopod eggs from dry soil collections using DNA extraction for genetic analysis.
3. Hydration and hatching of eggs for identification of adult branchiopods.
4. Dry season collection of soil to be used as a soil inoculum at suitable branchiopod habitat within the range of the listed branchiopod species.

The above mentioned “specialized permit activities” are not addressed further in these minimum qualifications. Specialized permit activities are not authorized without a detailed project-specific research proposal with appropriate facilities and a demonstrated proficiency in conducting the requested activities under the supervision of a permitted biologist. For more information on how to qualify for specialized activities, contact the Recovery Permit Coordinator at the applicable Service Fish and Wildlife Office that is nearest you (refer to Resources section below).

---

<sup>1</sup> The vernal pool fairy shrimp is the only federally listed large branchiopod species that occurs in Oregon.

**MINIMUM QUALIFICATIONS**

Our evaluation criteria for an individual to be independently authorized to conduct wet and/or dry season surveys for listed branchiopods is verifiable documentation that they have successfully completed the following requirement prior to submission of the recovery permit application:

1. A practical identification exam given by the Service or a Service-approved adult branchiopod identification course; within one year prior of the submittal of the recovery permit application to the Regional Office, and
2. A specific and well-documented period of field experience under the direct supervision of a permitted individual for the requested permitted activities.

**Practical Identification Exam:**

1. Individuals applying for a new permit involving the listed branchiopods, or an amendment to add listed branchiopod species to an existing permit must take and pass a practical identification exam at either an appropriate Service testing Field Office (currently either the Sacramento or Carlsbad Fish and Wildlife Office) or through a Service-approved training course within one year prior to submitting the recovery permit application to the Service. A passing grade on the exam is valid for the duration of the issued permit for each respective individual.
2. A permittee submitting a renewal application must retake and pass the exam within one year prior to submitting the renewal application to the Service. This exam requirement extends to all individuals independently authorized pursuant to the permit to conduct branchiopod activities. A passing grade on the exam is valid for the duration of the permit for the each respective individual.
3. A permittee requesting to add individual(s) to the “List of Authorized Individuals” for independently conduct branchiopod activities pursuant to the permit must provide appropriate documentation showing each requested individual have taken and passed the same exam requirement as stated above. A passing grade on the exam is valid for the duration of the permit for each respective individual.

To pass an exam, an individual must correctly identify all listed branchiopod species and all co-occurring non-listed branchiopod species occurring in California and southern Oregon, depending on the geographic authorizations under a permit. For individuals completing a Service-approved training course, verification of a passing grade must accompany the permit application and include a letter from the instructor indicating the student’s pass or fail status on the practical exam, the number of misidentifications made on the exam, and the names of the correctly and incorrectly identified species. When the exam is taken at a Service testing field office, the results will remain on file at that office.

To schedule an exam at a Service testing office, please contact the Recovery Permit Coordinator at either the Sacramento or Carlsbad Fish and Wildlife Office (see Resources section below).

**Field Experience for Wet and Dry Season Surveys:**

To become independently authorized and permitted to conduct wet season surveys, and dry season (soil collection) surveys for future resting egg identification, the applicant must meet the guidelines specified below:

**1. For Wet Season Surveys:**

The applicant must obtain and provide, if not previously documented and submitted, verifiable documentation of a minimum of 20 hours of focused field experience under the direct supervision of a permitted branchiopod biologist while conducting protocol surveys and collecting adult branchiopod specimens. This specialized experience should be acquired at a minimum of three (3) separate geographic locations with distinct vegetation and soil characteristics, and include detection of a minimum of two (2) listed branchiopod species if a geographic authorization includes California or the minimum detection of one (1) listed branchiopod species if a geographic authorization is limited only to Oregon. Additionally, for survey hours to count toward the 20 hour criterion, a listed species must be detected during the survey (*i.e.*, if no listed species are detected during a survey, none of those survey hours count).

The applicant must document their wet season field experience acquired under supervision and submit the following information with the permit application:

- a) The name(s) of the supervising permitted individual(s) and their associated permit number(s);
- b) Dates and hours of acquired directed field experience and the type of activity conducted (protocol surveys, dip netting, handling, *etc.*);
- c) Scientific and common names and approximate numbers of listed (and unlisted) branchiopods species observed in the wild or in the lab;
- d) The specific locations of the observations (including the County); and
- e) A letter of recommendation from each supervising individual (should be someone other than the applicant's current employer) describing the applicant's ability to independently conduct survey activities and identify branchiopod habitat and features on the landscape.

**2. For Dry Season Soil Collection:**

The applicant must obtain and provide, if not previously documented and submitted, verifiable documentation regarding how they acquired a minimum of 6 hours of focused field experience under the direct supervision of a permitted listed branchiopod biologist while collecting soil from dry branchiopod habitat features. This specialized experience should be acquired within a minimum of two (2) geographic locations and include training in soil collection techniques, avoidance of damage to any hard pan, avoidance of damage or destruction to federally listed plant species present, and storage and transport of soil collections for analysis.

The applicant must document their dry season field experience acquired under supervision and submit the following information with the permit application:

- a) The name of the supervising permitted individual and their associated permit number;
- b) The dates and hours of acquired directed field experience and the type of activity conducted (soil collection, appropriate documentation, packaging, transport of soil collections for analysis, *etc.*);
- c) The specific locations of the soil collections in the wild (including County and GPS coordinates); and
- d) A letter of recommendation from each supervising individual and/or a species expert supporting the applicant's ability to independently conduct dry season soil collection activities (these may be from the same individual(s) that provided letters of recommendation for the wet-season survey experience).

In summary, to become independently authorized, a minimum of 26 hours of field experience (20 hours of wet season and 6 hours of dry season) under permitted supervision is required to independently conduct wet and dry season surveys for listed large branchiopods. Failure to meet these minimum qualifications and/or failure to provide a complete permit application that includes verifiable documentation of the training specified above will result in delays in processing the permit and may result in rejection of the application.

**Resources:**

For additional recovery permitting information contact the Recovery Permit Coordinator of the applicable Service Fish and Wildlife Office that is subject to your inquiry. Contact information:

Sacramento Fish and Wildlife Office, 2800 Cottage Way, W-2605, Sacramento, California 95826, contact Sarah Markegard by email at [sarah\\_markegard@fws.gov](mailto:sarah_markegard@fws.gov) or by telephone at 916-414-6492.

Carlsbad Fish and Wildlife Office, 2177 Salk Avenue, Suite 250, Carlsbad, California 92008, contact Stacey Love by email at [stacey\\_love@fws.gov](mailto:stacey_love@fws.gov) or by telephone at 760-431-9440.

Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, California 93003, contact Chris Kofron by email at [chris\\_kofron@fws.gov](mailto:chris_kofron@fws.gov), or by telephone at 805-644-1766.

Bay-Delta Fish and Wildlife Office, 650 Capital Mall, 8<sup>th</sup> Floor, Room 8-300, Sacramento, California 95814, contact Angela Galarreta at [jazmine\\_galarreta@fws.gov](mailto:jazmine_galarreta@fws.gov), or by telephone at 916-930-5636.

Arcata Fish and Wildlife Office, 1655 Heindon Road, Arcata, California 95521, contact Susie Tharratt by email at [susie\\_tharratt@fws.gov](mailto:susie_tharratt@fws.gov), or by telephone at 707-822-7201.

Oregon Fish and Wildlife Office, 2600 SE 98<sup>th</sup> Avenue, Suite 100, Portland, Oregon 97266, contact Dan Perritt by email at [dan\\_perritt@fws.gov](mailto:dan_perritt@fws.gov) or [FW1OFWO@fws.gov](mailto:FW1OFWO@fws.gov) or by telephone at 503-231-6179.

Roseburg Fish and Wildlife Office, 2900 NW Stewart Parkway, Roseburg, Oregon 97470, contact Sam Friedman by email at [sam\\_friedman@fws.gov](mailto:sam_friedman@fws.gov) or by telephone at 541-9573478

Branchiopod Practical Identification Exam Testing Locations and Contacts:

Carlsbad Fish and Wildlife Service Office

Contact: Stacey Love (email: [stacey\\_love@fws.gov](mailto:stacey_love@fws.gov), phone 760-431-9440)

Sacramento Fish and Wildlife Service Office

Contact: Sarah Markegard (email: [sarah\\_markegard@fws.gov](mailto:sarah_markegard@fws.gov), phone 916-414-6492)

Service-Approved Branchiopod Identification Courses:

“The Fairy Shrimp and Tadpole Shrimp (Branchiopoda) of California, Oregon, and Washington With Emphasis on the Federally Listed Species”

Contact: D. Christopher Rogers, Kansas University, Higuchi Hall, 2101 Constant Avenue, Lawrence, KS 66047-3759 (email: [branchiopod@gmail.com](mailto:branchiopod@gmail.com), phone: 785-864-1714)

“California Anostraca and Notostraca Identification Class”

Contact: Mary Schug Belk (email: [marybelk@att.net](mailto:marybelk@att.net), phone: 210-842-9152, website: <http://belkfairyshrimp.com/>)

Internet Links:

To review the survey protocol for this species, refer to our [Survey Guidelines for the Listed Large Branchiopods, May 31, 2015](http://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/es_survey.htm) found at: [http://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/es\\_survey.htm](http://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/es_survey.htm).

\*\*This document may be revised at any time at the discretion of the Service.