

Sponsored by The Wildlife Society – Western Section

Bat Ecology and Field Techniques Workshop

September 8-11, 2017

Location: Yosemite Bug, Midpines, CA

Instructors: Dr. Dave Johnston, Santa Clara University/H.T. Harvey & Associates

Dr. Joe Szewczak, Professor, Humboldt State University



Coordinator/Contact for Questions: Ivan Parr, workshops@twc-west.org

Description:

This workshop combines lecture, discussion, and field exercises to introduce participants to the ecology and conservation of California bats, covering species accounts, physiology, anatomy, behavioral ecology, conservation issues, and mitigation strategies. Field techniques of mist-netting, assessing species presence or absence, and acoustic monitoring will be demonstrated with participants gaining hands-on experience in mist-net set-up and acoustic monitoring and analysis. Evening field excursions typically capture a half dozen bat species and, for those who have proof of current rabies vaccination, allow practice in extracting, handling, as well as collecting and recording data from captured bats.

Requirements for Handling Bats During Workshop:

Handling bats is not a requirement of this workshop; participants will learn valuable field techniques with or without handling. To handle bats, participants must provide a Doctor's note **proof of rabies vaccination or sufficient rabies antibody titer results** within the past 3 years. We advise that participants start the 3-shot prophylaxis vaccination series immediately, as Occupational Health & Safety/Private Health Insurance approval may be lengthy.

Workshop participants operate under current federal/state permits held by the instructors, & follow Western Bat Working Group protocol to prevent transmission of WNS.



Pre-Register: Registration cost includes beverages/coffee/tea/snacks/sack dinner, extensive training materials, and hands-on experience with modern equipment. We will travel to field sites in participant vehicles.

All registrants complete the secure online form at:

https://www.wildlifeprofessional.org/western/batft2017_req.php

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Participants will need to bring breakfast and lunch items to self-prepare in the communal kitchen, or self-purchase these meals from the Yosemite Bug Café, which serves excellent food for all dietary preferences.

Registration payable by check or credit card/received or postmarked:

	<u>On or before Aug 8th</u>	<u>After Aug 8th</u>
<u>Member, TWS Western Section</u>	<u>\$450</u>	<u>\$495</u>
<u>Non-Member</u>	<u>\$495</u>	<u>\$540</u>
<u>Student/New Professional* (maximum 2 registrants at this level)</u>	<u>\$225</u>	<u>\$270</u>

***Must show proof of current registration at an accredited university, or graduation within 6 months of workshop date.**

The maximum enrollment is 20 after which, a waiting list will be kept. A minimum of 10 participants must register for the workshop by **August 21** or the workshop will be cancelled and all registration fees will be returned. If the workshop can be rescheduled, we will offer transfer to the alternate dates in the priority registrations were received. Registrants will be processed in the order received and successful registrants will receive workshop logistics and information once full payment is confirmed received.

Credit cards are accepted on-line. Instructions for purchase order or check payments are included as part of the on-line registration process.

Lodging

Lodging is not included in registration. Only a limited number of beds (dorm, shared, or private lodging) have been reserved through by workshop coordinator for reservation by participants, so book quickly. Additional costs are as follows, for 3 nights each:

\$28/night for dorm lodging

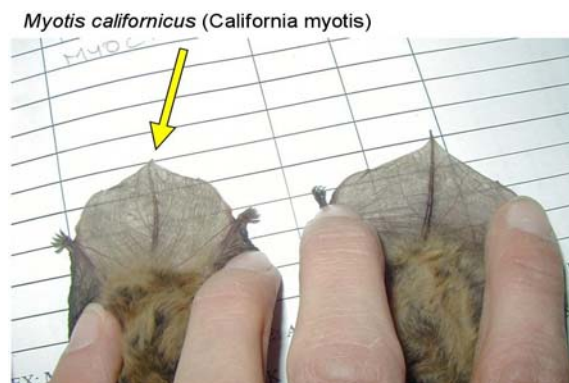
\$58/night shared lodging for 1 queen/2 twin with private bath

\$145/night private queen bed lodging

Please book your lodging here, noting you are with the workshop.

<http://www.yosemitebug.com/>

Cancellation and Refund Policy: To receive a refund of workshop registration fees, we must receive your cancellation no later than 14 days before the first day of the conference. There will be no refunds due to inclement weather, Federal budget issues, furloughs or other events beyond the control of TWS-West. All refunds are subject to a \$50 processing fee. Requests for refunds must be submitted in writing, either by mail or e-mail. Refund requests received within 14 days of the start of the conference will not be processed regardless of personal or professional emergency, and no refund after that date is available. However, registration may be transferred to another individual for a \$25 transfer fee.



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DRAFT WORKSHOP SCHEDULE (SUBJECT TO CHANGE PER INSTRUCTORS)

Friday

- 5:00 p.m. Registration check-in, lodging assignment, settling in
- 6:00 p.m. Introductions of Participants and Instructors, snacks
- 6:30 p.m. Field Exercises: Setting acoustic equipment
- 7:45 p.m. Dinner, Introductory lecture will start during dinner
- 8:30 p.m. Introductory Lecture on California Bat Natural History (Szewczak): life history; challenges to life as a bat and the special solutions bats have developed, anatomy; bat physiological ecology relevant to their habitat needs; threats to bat survival; why are they so threatened?; ecological value of bats; foraging behavior and considerations
- 9:45 p.m. Field Exercises (end at 10:45 p.m.)

Saturday

- 8:00 a.m. Coffee/Tea ready in the classroom
- 8:30 a.m. Breakfast in Café
- 9:00 a.m. Lecture: Acoustic monitoring (Echolocation 101 – Szewczak): The mechanics of sound and how it carries information; Techniques used to monitor bats; advantages/limitations of capture methods; advantages/limitations of acoustic methods; what information can be gained acoustically; Where and how to collect calls; practical advice; Monitoring program design, implementation, and data analysis; Understanding bat detectors and how they work (know your tool); Understanding and using digital sound recording - automated recording; Terminology used to study bat echolocation; Call morphology and species discrimination
- 12:30 p.m. Long Lunch (rest time) & Pack your own dinner
- 2:00 p.m. Lecture: Identifying California bats (Johnston and Szewczak): diversity and distribution; introduction to species identification and handling bats; using keys; tips on differentiating similar species; accounts:
 - 1. Physical description and identifying characters
 - 2. Geographic range and habitat associations
 - 3. Status (e.g., California species of special concern)
 - 4. Reproduction and development
 - 5. Ecology –a. roosting b. foraging c. other aspects of natural history
 - 6. Conservation issues (threats to California populations)
- 5:30 p.m. Review gear, Field Exercises: Acoustic Monitoring & Mist-netting (Dinner in field, end at 10:30)



Sunday

- 8:00 a.m. Coffee/tea is on in the classroom.
- 8:30 a.m. breakfast in café
- 9:00 a.m. Review Previous Night's Captures, Ecological Considerations, Data Analysis
- 12:30 p.m. Lunch & Pack your own dinner, BREAK (Go take a nap)
- 4:00 p.m. Review gear, prepare caravan for field exercises
- 5:00 p.m. Depart for Field (Dinner in field), Set nets, acoustic Equipment, roost presence/absence
- 11:00 p.m. Return to Field Station and begin data analysis

Monday

- 8:00 a.m. coffee, pack up & clean camp area, followed by 9:00 a.m. breakfast, pack optional sack lunch
- 10:00 a.m. Conservation Issues and Strategies (Johnston and Szewczak) & Discussion (All)
- 1:00 p.m. Workshop concludes, fill-out evaluations

Instructor Biographies

Dr. Dave Johnston



We are very lucky to have Dr. Dave Johnston reprise his role as an instructor for this course. Dave, a well-recognized name in mammalogy across the western United States, has studied bats for over 30 years. Dave has been influential in bat research within the United States and overseas, but is particularly notable for bat mitigation and restoration projects in California, Hawaii, and the Southwest. He was the senior author on CalTrans's California Bat Mitigation Guidelines, and a contributing author of the CDFW's California Mammal Species of Special Concern. If Dave looks familiar to you, you may be seen him on public television productions of Nature and Quest; or during any of his many lectures or workshops through the Western Section of The Wildlife Society, the U.S. Bureau of Land Management, and the California Academy of Sciences. Currently, Dave works as an Associate Ecologist at H.T. Harvey & Associates, and as an adjunct professor at San Jose State University. His other research involves salt marsh harvest mice, wind energy impacts on birds, Ridgway's rail, western snowy plover, listed ESU's of the steelhead, and California red-legged frog.

Dr. Dave Johnston received his B.S. in biology at Cal Poly San Luis Obispo; his M.S. from San Jose State University, and Ph.D. in biology from York University.

Dr. Joe Szewczak

Dr. Joe Szewczak is a prominent name in bat research for a variety of studies, but holds the greatest distinction in being the creator of SonoBat. SonoBat, a full-spectrum ultrasound recording analysis used in identifying species of bat by their echolocation, has become one of the principles of field biology. Joe developed it as an alternative to the more problematic use of mist nets during Joe's work on bat ranges in the Eastern Sierra. His acoustic monitoring studies have also become invaluable for studying wind energy impacts on bats and other nocturnal organisms. Joe's research on echolocation and vocalization doesn't stop with bats. He has also published on vocal individuality of birds, including the elusive Yosemite great gray owl. Other research of Joe's focuses on comparative physiology and physiological ecology. In particular, Joe has published extensively on the physics and chemistry of gas exchange and metabolic capacity in aerial animals. These studies have demonstrated how organisms evolved to interact with the ambient environment during flight, torpor, and at high altitudes. <http://users.humboldt.edu/joe/publications.htm>



Dr. Joe Szewczak received his B.S. at Duke University, and his Ph.D. from Brown.