



SECOND OPINIONS * EXPERT MANUAL VETTING * COMPLETE PROJECT REPORTS

PRICING AND TURN-AROUND TIME ON RECORDINGS:

PROJECT SIZE	2 nd Opinions	Probable Presence / File-level Vetting	Project Reports
1 – 20 files	\$95 flat rate	\$175 / \$275	\$175 flat rate
21 - 50 files	\$195 flat rate	\$250 / \$450	\$175 / hour
51+ files	\$150 / hour	\$150 / hr. either analysis	
Turn-around Time	5-10 business days	1-2 weeks	<i>please inquire</i>

**The different levels of analysis (“Probable Presence” or “File-level Vetting”) above are described in EXPLANATION OF SERVICES, paragraph #2 below. All files must be accompanied by complete metadata (see “Minimum Requirements” below.*

MINIMUM REQUIREMENTS FOR ALL DATA SUBMITTED

1. **STATE AND COUNTY RECORDINGS** were made. Additional location information is helpful, but not required (e.g., nearest town, landownership, Lat/Long, elevation)
2. **DATE(S) OF DEPLOYMENT.** Additional site information is helpful (e.g., weather conditions; temperature, dew point, cloud cover, humidity, wind, precipitation)
3. **MAKE AND MODEL OF DETECTOR** used (include installed firmware version and all recording settings; inquire if you are unsure of what to include)
4. **MICROPHONE TYPE AND DEPLOYMENT** description (e.g., external cabled microphone, any directional attachments, height above-ground-level (AGL), and orientation and/or azimuth, position in habitat; over water, in clearing, along forest edge, etc.)
5. **PLEASE INQUIRE IF DATA IS FOR NABAT** as this is billed separately according to the North American Bat Monitoring Program protocols and expectations.

WE ACCEPT

1. **Full-spectrum (FS) Recordings** only (*.WAV format; *.WAC format will be accepted, at an additional charge)
2. For *Analysis/Vetting* or *Narrative Reports*, data *must* be submitted on an external storage device, no file-transfers will be accepted (use USB drives for small batches, external hard-drives for large batches)
3. Data *must* be organized in separate folders by night and by detector
4. For *2nd Opinions* only, file-transfers will be accepted. If you do not have a file-transfer method, BatSS will set up a secure FTP server to receive files.
5. ***We Do Not Accept Zero-cross (Frequency Division) Recordings at this time.***

EXPLANATION OF SERVICES

1. **SECOND OPINIONS** on full-spectrum (WAV) files. Includes a file-level result, vetted to species, or species-guild, for *all* recordings submitted and at least one representative spectrogram screen-shot for each species confidently identified will be returned with a short narrative explaining the species (or species-guild) decision.

2. **ANALYSIS OF MLE'S AND/OR MANUAL VETTING** on raw or attributed files for species of interest, or for the entire collection, at two different grades of precision:
 - a. **PROBABLE PRESENCE:** All recordings submitted are evaluated to determine probable presence. We will evaluate your MLE outputs (if submitted) and determine site-level, or project-level occupancy based on these values for the species-of-interest after vetting results. Otherwise, we will provide a file-level summary of species ID after manually vetting recordings for the species-of-interest based on the representative WAV files submitted.
 - b. **FILE-LEVEL ANALYSIS AND VETTING:** Analysis protocols relying upon auto-classifiers alone are flawed when it comes to determining “species of interest” presence because no computer-program is sophisticated enough to take into account all the problems inherent in relying upon automated quantitative analysis of "images" (e.g., spectrograms of echolocation calls). Certain qualitative analysis steps are required to address the ambiguities in echolocation call recordings created by: (1) the artifacts present in echolocation recordings caused by atypical bat behavior; (2) atmospheric affects that change how high-frequency sound behaves in air, thus how faithfully it is recorded for confident analysis; (3) the uncontrollable approach angle, speed, and direction with which the bat approaches a stationary microphone — and — the intensity and/or frequency with which the bat echolocates, any of which can affect signal quality and therefore classification accuracy; and (4) the presence of conspecifics and/or allospecifics in the same recording and the affect that multiple bats have on auto-classification accuracy. Therefore, acoustic surveys in which 100% of the recordings are manually reviewed, not only addresses the identification of false-positives for the species of interest, but also the false-negative classifications. It also confirms all true-positives and true-negatives thereby producing the most accurate representation of probable species presence. *(Not every client will desire to select a File-level Analysis, but the efforts from such a review represent the most robust results possible from acoustic surveys and reduce or eliminate ambiguities, which may be important for some stakeholders.)*
3. **COMPLETE PROJECT REPORTS**, a full summary of all data submitted, including results from two (2) auto-classification outputs, MLE results from each, manual-vetting of all species, or species of interest, and narrative with justifications and spectrogram screenshots of all species/species-of-interest confidently identified.

Acoustic surveys for bats are challenging. The problem lies with the plasticity inherent in bat echolocation calls and how bats actually use echolocation. A bat's need for information, and therefore the type of echolocation call it will use, can change with prey-type, habitat complexity, and behavior. For many species, confident classification can only be achieved on a subset of call types within a bat's repertoire.

SMALL PRINT

All Pricing and Turn-around Time estimates are based on materials meeting the acceptance and information criteria above. A \$50 service charge will be assessed for requests submitted with incomplete information necessitating follow-up requests from Bat Survey Solutions, LLC to complete the submission. Turn-around times may be longer during the field season; May thru October.

Submission of raw files, straight off the bat detector, is subject to an Attribution Fee of \$250 per detector location, for the first detector location, plus \$50 for each additional detector location on the same project, for up to 30-days (1 month) of deployments. Processing additional months for long-term deployments if detectors are not re-located will pro-rated at 10% of the cost for the previous month. NABat post-processing, analysis, and submissions are charged under a separate fee-schedule. Please inquire if your data is part of a NABat Summer Survey effort or otherwise needs to be shared via the NABat Partner Portal.

Expedited service may be available at an additional 50% up-charge fee during certain times of the year.

To submit files or discuss your project, contact:

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(0730h-1500h MST, M-Th)