Table of Contents

Contact Information:

AllStar Ecology LLC.
1582 Meadowdale Road
Fairmont WV, 26554
Project Manager: Greg Short
Cell: (304) 216-5690
Office: (304) 816-3490
Website: www.allstarecology.com
Email: greg@allstarecology.com

FEIN Number: 26-1557130

Total Cost: $46,420.00

Big Brown Bat (*Eptesicus fuscus*) – Milu Karp

Completed and Signed Quotation

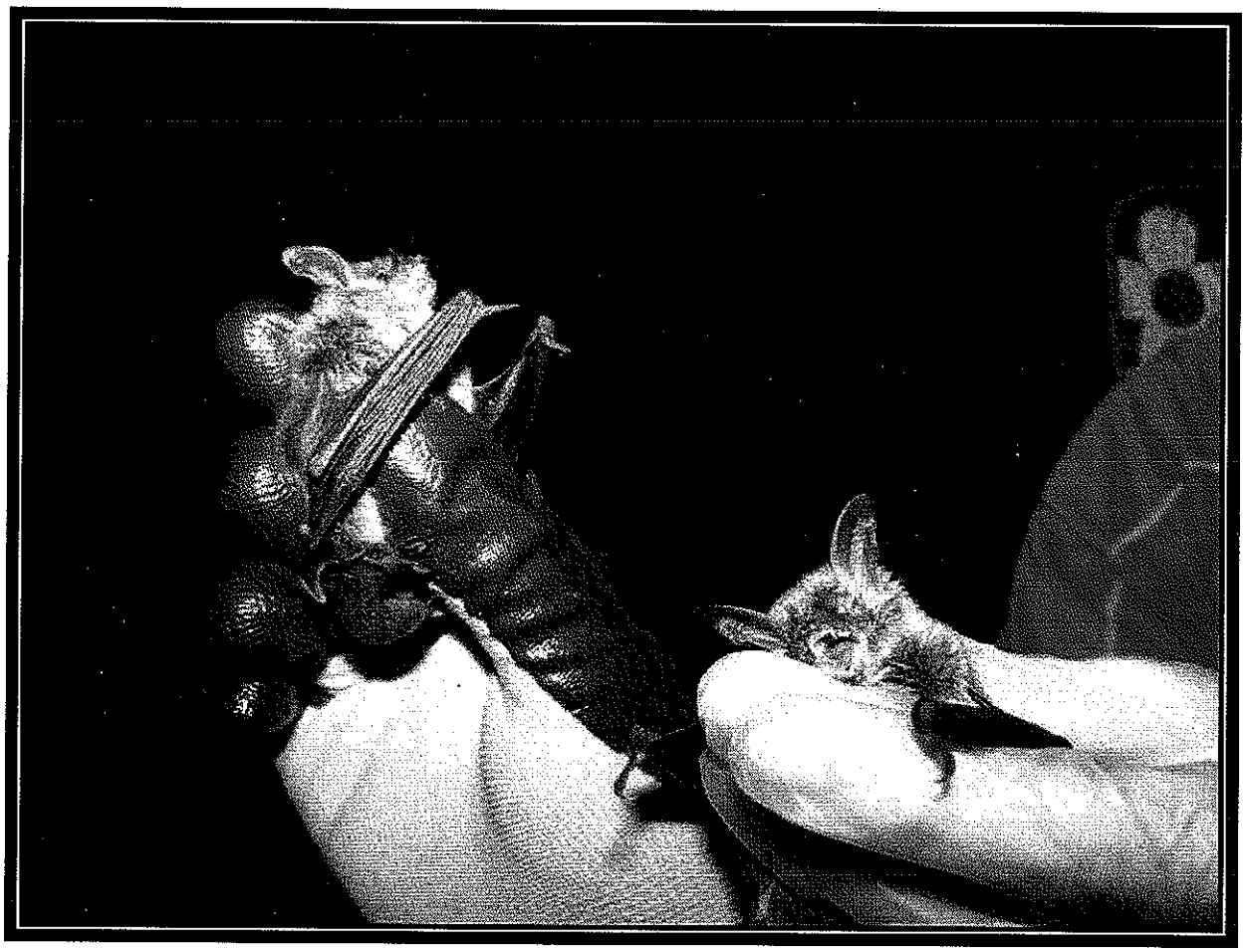
AllStar Ecology LLC.

1582 Meadowdale Road

Fairmont, WV 26554

FEIN Number: 26-1557130

DUNS: 829007876



Little Brown Bat (*Myotis lucifugus*) and Northern Long-eared Bat (*Myotis septentrionalis*) – Sheila Captain

EXHIBIT A
RFQ # DEFK13017

ALL LABOR, MATERIALS, EQUIPMENT, AND SUPPLIES NECESSARY TO CONDUCT CRITICAL FAUNA SURVEY FOR INDIANA BAT ON CAMP DAWSON ARMY TRAINING SITE AT KINGWOOD, WV

BID FORM

The undersigned, hereafter called the Bidder, being familiar with and understanding the bidding documents; and being familiar with the required qualifications and the mandatory requirements of the Project with regards to the deliverables and associated timelines, hereby proposes to furnish labor, material, equipment, supplies, and transportation to perform the work as described in the bidding documents

BIDDERS COMPANY NAME: AllStarEcology LLC

VENDOR ADDRESS: 1582 Meadowdale Road

Fairmont, West Virginia 26554

TELEPHONE: (304) 816-3490

FAX NUMBER: 1-866-213-2666

E-MAIL ADDRESS: ryan@allstarecology.com

OVERALL TOTAL COST:

Forty-Six Thousand Four Hundred and Twenty 00/100 Dollars

($ $46,420.00) ***(Contract bid to be written in words and numbers.)

The contract will be awarded to the Bidder with the lowest overall total cost meeting all of the specifications. Bidder understands that to the extent allowed by the West Virginia Code, the OWNER reserves the right to waive any informality or irregularity in any bid, or bids, and to reject any and all bids in whole or in part; to reject a bid not accompanied by the required bid security or by other data required by the bidding documents; to reject any conditions of the bid by the Bidder that is any way inconsistent with the requirements, terms, and conditions of the bidding documents; or to reject a bid that is in any way incomplete or irregular.

Failure to use this bid form may result in bid disqualification.

SIGNATURE: Ryan Ward DATE: 5/29/2013

NAME: Ryan Ward
(Please Print)

TITLE: Senior Environmental Scientist

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

AllStar Ecology, LLC.

(Company)

Ryan Ward

(Authorized Signature)

Ryan Ward, Senior Environmental Scientist

(Representative Name, Title)

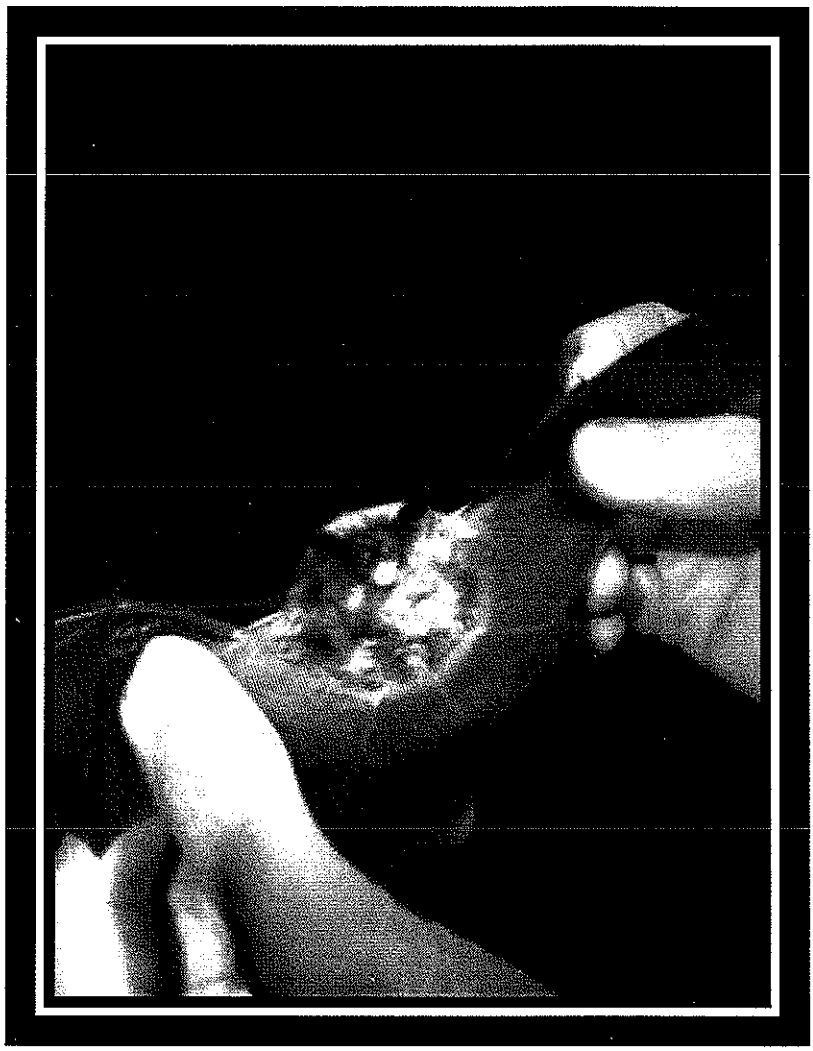
Phone: (304) 816-3490; Fax: 1-866-213-2666

(Phone Number) (Fax Number)

5/29/2013

(Date)

Addendums



Small-footed Bat (*Myotis leibii*) –Sheila Captain

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: DEFK13017

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[✓]	Addendum No. 1	[ ]	Addendum No. 6
[ ]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

AllStar Ecology, LLC
Company

Ryan L Wood
Authorized Signature

5/20/2013
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: DEFK13017

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[ ]	Addendum No. 1	[ ]	Addendum No. 6
[✓]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

AllStar Ecology, LLC
Company

Ryan Ward
Authorized Signature

5/29/2013
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

Purchasing Affidavit

Big Brown Bat (*Eptesicus fuscus*) – Sheila Captain

RFQ No. DEFK13017

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: AllStar Ecology, LLC.

Authorized Signature: Ryan L Vond Date: 5/29/2013

State of West Virginia

County of Marion, to-wit:

Taken, subscribed, and sworn to before me this 29 day of May, 2013.

My Commission expires 3/18/, 2022

AFFIX SEAL HERE

Official Seal
Notary Public, State of West Virginia
Kathy J Davis
264 Frances Street
Pleasant Valley, WV 26554
My commission expires March 18, 2022

NOTARY PUBLIC Kathy J Davis

Vender Preference Certificate

Virginia Big-eared Bat (*Corynorhinus townsendii virginianus*)

Rev. 07/12

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with ***West Virginia Code***, §5A-3-37. (Does not apply to construction contracts). ***West Virginia Code***, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the ***West Virginia Code***. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

1. **Application is made for 2.5% resident vendor preference for the reason checked:**
___ Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or,**

___ Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or,**

___ Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or,**

2. **Application is made for 2.5% resident vendor preference for the reason checked:**
X Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or,**

3. **Application is made for 2.5% resident vendor preference for the reason checked:**
___ Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or,**

4. **Application is made for 5% resident vendor preference for the reason checked:**
___ Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or,**

5. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**
___ Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or,**

6. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**
___ Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

7. **Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with *West Virginia Code* §5A-3-59 and *West Virginia Code of State Rules*.**
___ Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: AllStar Ecology, LLC **Signed:** Ryan Waid

Date: 5/29/2013 **Title:** Senior Environmental Scientist

Technical Proposal

Eastern Red Bat (*Lasiurus borealis*) - Milu Karp

Phase 1: Habitat Assessment

Suitable summer habitat for Indiana bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags greater than 5 inches dbh19 (12.7 centimeter) that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat.

Phase 1 surveying will entail the remote sensing and onsite quantification/qualification of suitable Indiana bat (*Myotis sodalis*; hereafter Indiana bat) habitat. Remote sensing will require the determination of forest/non-forest, forest fragmentation, and cover types within a 2 mile (3.2km) buffer and the Pringle Tract (1,632 ac), Briery Tract (1,251 ac), and Volkstone Tract (504 ac) of Camp Dawson. This overall analysis is intended to better describe the current state of the landscape, in and around Camp Dawson, as it pertains to use by Indiana bats. Three raster datasets will be used to characterize the landscape: Land Cover (NLCD 2006), Landuse/landcover of WV (2011), and Forest Fragmentation of WV (2011). The onsite habitat assessment will involve the characterization of forest cover types onsite, including overall composition (i.e., species, successional stage, etc.), quantification of cover type area, and qualitative assessment of habitat suitability (i.e., PRTs, riparian/upland corridors).

The remote and onsite habitat assessments will allow for both the quantification of survey effort and appropriate acoustic/mist-netting equipment placement and thus quality presence/absence sampling. The remote sensing survey will enable biologists to concentrate survey efforts for potential bat roosts (PRT), particularly shagbarks (*Carya ovata*) and large snags, along with feeding/flight corridors of Indiana bats. Identification of high quality PRTs along with well-defined travel routes will allow for the placement of both acoustic and/or mist-netting in high quality habitat.

Phase 2: Presence/Absence Sampling – Acoustic Survey

Phase 2 presence/absence sampling will incorporate the deployment of iFR-IV Integrated Field Recorders near (a) forest-canopy openings; (b) near water sources; (c) wooded fence lines that are adjacent to large openings or connect two larger blocks of suitable habitat; (d) blocks of recently logged forest where some potential roost trees remain; (e) road and/or stream corridors with open tree canopies or canopy height of more than 33 feet (10 meters); and (f) woodland edges (Britzke et al. 2010) within approximately 27 one hundred and twenty-three acre plots (0.5 km^2). Three recorders will be deployed at each 123 acre site beginning at sunset and ending at sunrise for two consecutive nights (6 net nights).

The iFR-IV Integrated Field Recorders will be deployed: (a) at least 5 feet (1.5 meters) in any direction from vegetation or other obstructions (Hayes 2000; Weller and Zabel 2002); (b) in areas without, or with minimal, vegetation within 33 feet (10 meters) in front of the microphone; (c) parallel to woodland edges; and (d) at least 49 feet (15 meters) from known or suitable roosts (e.g., trees/snags, buildings, bridges, bat houses, cave or mine portal entrances). If possible, the iFR-IV Integrated Field Recorder microphone will be elevated $\geq$4.92 feet (1.5 meters) above ground level vegetation via a pole to listen out into flight space to gather the highest quality calls possible. Acoustic sites will be distributed throughout the respective Pringle Tract (1,632 ac), Briery Tract (1,251 ac), and Volkstone Tract (504 ac) of Camp Dawson, with individual recorders being at least 656 feet (200 meters) apart.

Verification of Deployment Location

Detachable GPS units will be attached to each recorder (according to manufacturer's instructions) to record exact locations for each acoustic site and its individually named iFR-IV Integrated Field Recorder and .wav data files.

Verification of Proper Functioning

Field verification of iFR-IV Integrated Field Recorder functionality will be done by creating ultrasonic sounds (e.g., finger rubs, whistles) in front of the microphone at survey start and finish. This documents that the equipment was working when deployed and retrieved. The iFR-IV Integrated Field Recorder settings (e.g., sensitivity, frequency, etc.) will follow the recommendations provided by the manufacturer. Surveyors should also save files produced by detectors daily to ensure data organization and protection during the survey period.

If, for any reason, an iFR-IV Integrated Field Recorder is deployed near the ground (e.g., on a tripod) it will be aimed $\geq$45° above horizontal. Any microphones deployed higher within the flight path/zone (e.g., on a pole) will be oriented

horizontally. If sampling within features such as forest openings, the iFR-IV Integrated Field Recorder's microphone will be aimed vertically.

Once acoustic sites are identified, photographs documenting the orientation, detection cone (i.e., "what the detector is sampling"), and relative position of the microphone will be taken for later submittal to the USFWS FO(s) as part of the acoustic survey report.

Weather Conditions

If any of the following weather conditions exist at a survey site during acoustic sampling, the time and duration of such conditions will be noted, and it will be necessary to repeat the acoustic sampling effort for that night: (a) temperatures below 50°F (10°C) during the first 5 hours of survey period; (b) precipitation that exceeds 30 minutes or continues intermittently during the first 5 hours of the survey, and (c) sustained wind speeds greater than 9 miles/hour (4 meters/second) during the first 5 hours of the survey period. At a minimum, nightly weather conditions for survey sites will be checked using the nearest NOAA National Weather Service station and summarized in the survey reports.

Weatherproofing

The iFR-IV Integrated Field Recorder is a fully waterproof system that, if necessary, may be left out in periods of precipitation. No modification (i.e., pvc cones) will be made to the unit to ensure the highest quality recordings possible. Despite its weatherproof nature, weather condition protocols will be strictly followed.

Acoustic Analysis

Two of the available 'candidate' acoustic bat identification programs (Kaleidoscope and BCID) will be used to classify bat calls to species. Beginning with acoustic data from night one, at each acoustic site, each night's data will be ran for each site through both acoustic identification programs. Results will be reviewed by night and site from each acoustic identification program and each file indicating a positive probable detection of Indiana bats ($P<0.05$) will be flagged. Sites with a significant presence value ($P<0.05$) of Indiana bats will be selected for Phase 3 mist-netting for capture. Also, sites with high total acoustic classifications of little brown bats (*Myotis lucifugus*) or other *myotid* calls may be mist-netted to militate against potential false-positive or false-negative acoustic classifications.

Phase 3: Mist-netting to Capture Indiana Bat (*Myotis sodalis*)

Since there are no minimum requirements for this phase, as this is not a presence/absence phase, AllStar Ecology recommends adherence to the 2007 mist-net sampling guidance methodology for the capture of Indiana bats. If a significant presence value ($P<0.05$) is recorded two net sets will be erected at one site for two consecutive nights (4 net nights). Furthermore, AllStar Ecology recommends a minimum of 10 nights of mist-netting on sites identified as high quality Indiana bat habitat or in areas of high myotid calls, regardless of acoustic detection significance.

NET PLACEMENT

Mist-netting sites will be in the approximate location of the iFR-IV Integrated Field Recorder that registers a significant presence value ($P<0.05$). It is likely that nets will be placed perpendicularly across corridors. Nets will fill the corridor from side to side, extending beyond the corridor boundaries when possible, and from stream (or ground) level up to the overhanging canopy. Nets of varying widths and heights will be used as the situation dictates. A typical set is at least 5 m to 9 m high consisting of two or more nets stacked on top one another and from 6 m to 18 m wide. If netting over water, there will be enough space between the net and the water so that captured bats will not get wet. Although no minimum spacing between mist-nets is being specified, nets will be set-up throughout suitable habitat. Photo documentation of net placement will be made at each site.

SURVEY PERIOD

The survey period shall begin at sunset and continue for at least 5 hours.

CHECKING NETS

Each net set-up will be checked approximately every 15 minutes (Gannon et al. 2007). Care will be taken to minimize noise, lights, and movement near the nets. The nets and surrounding area will be monitored by a iFR-IV Integrated Field Recorder to allow for additional sampling of the area, net relocation, and for the potential identification of any individuals that escape during netting. There will be no other disturbance near the nets, other than to check nets and remove bats. Biologists will be prepared to cut the net if a bat is severely entangled and cannot be safely extracted within 3 or 4 minutes (CCAC 2003; Kunz et al. 2009).

Indiana bats will not be held for more than 30 minutes after capture, unless the individual is targeted for radio-tracking. Bats targeted for radio-tracking will be released $\leq$45 minutes after capture.

DOCUMENTATION OF MYOTIS SODALIS CAPTURES

If an Indiana bat(s) is captured during mist-netting the USFWS FO will be notified of the capture within 48 hours, and the sex and reproductive condition of the bat and GPS coordinates of the capture site will be provided.

Photo-documentation of all bats captured and identified as Indiana bats and the first 10 little brown bats per project will be submitted to the USFWS FO to verify the identifications made in the field.

Photo-documentation will include diagnostic characteristics:

- a 3/4-view of face showing ear, tragus, and muzzle
- view of calcar showing presence/absence of keel

Documentation of capture site, date of capture, time of capture, sex, reproductive condition, age, weight, right forearm measurement, band number and type (if applicable), and Reichard's wing damage index score (Reichard and Kunz. 2009) will conducted for each bat captured.

To minimize potential for disease transmission, any equipment that comes in contact with bats will be cleaned, following approved protocols.

Phase 4: Radio-Tracking and Emergence Surveys

The radio transmitter, adhesive, and any other markings (e.g., wing bands) will weigh less than 5% of pre-attachment body weight (American Society of Mammalogists 1998), but will not weigh more than 10% of a bat's total body weight (Kurta and Murray 2002) and will comply with any USFWS and state permits. The attachment of a transmitter to any pregnant or juvenile Indiana bat will be forgone to militate against any potential negative health effects.

Biologist(s) and/or biological technician(s) will track all radio-tagged bats captured to diurnal roosts using TRX-1000WR tracking receivers. Tracking will proceed on until the transmitter fails, falls off, or for at least 7 days. In the event that a roost is located, two evening emergence counts at each identified roost will be conducted. If landowner access is denied, approximate roost locations (i.e., coordinates) will be determined using triangulation.

Daily radio telemetry searches for roosts will be conducted during daylight hours and will be conducted until the bat(s) is located or for a minimum of 4 hours of ground effort per tagged bat per day for 7 days. However, multiple bats captured at the same net location or nearby will be, if feasible, tracked simultaneously. Once a signal is detected, tracking will continue until the roost is located. The biologist(s) will document all ground searching efforts for all bats not recovered during radio-tracking for submittal with the survey report.

For each roost identified during tracking, the biologist(s) will complete a "USFWS Indiana Bat Roost Datasheet".

EMERGENCE SURVEYS FOR KNOWN INDIANA BAT ROOSTS

Bat emergence surveys will begin one half hour before sunset and continue until at least one hour after sunset or until it is otherwise too dark to see emerging bats. The surveyor(s) will be positioned so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats will be recorded every few minutes or as natural breaks in bat activity allow. There will be at least one surveyor per roost. Surveyors will be close enough to the roost to observe all exiting bats but not close enough to influence emergence. If available, use of an iFR-IV Integrated Field Recorder will be used to aid in identifying the exact timing of bats emerging and may be used to help differentiate between low- and high-frequency bats species.

Emergence surveys will not be conducted when the following conditions exist: (a) temperatures fall below 50°F (10°C); (b) precipitation that exceeds 30 minutes or continues intermittently during the survey period; and (c) sustained wind speeds greater than 9 miles/hour (4 meters/second).

Biologist(s) will use the attached (or similar) "Bat Emergence Survey Datasheet". Biologist(s) will also complete an "Indiana Bat Roost Datasheet" for each roost known to be used by one or more Indiana bats.

Past Experience

Hurst 21 Waterline Habitat Availability and Assessment Report for the Indiana Bat (*Myotis sodalis*) – Harrison County, West Virginia

Kirk Pad Habitat Availability and Assessment Report for the Indiana Bat (*Myotis sodalis*) – Doddridge County, West Virginia

Maxwell Pad Pad Habitat Availability and Assessment Report for the Indiana Bat (*Myotis sodalis*) – Harrison County, West Virginia

McGill Pad Habitat Availability and Assessment Report for the Indiana Bat (*Myotis sodalis*) – Doddridge County, West Virginia

Nash Pad Habitat Availability and Assessment Report for the Indiana Bat (*Myotis sodalis*) – Doddridge County, West Virginia

Plaugher North Pad Habitat Availability and Assessment Report for the Indiana Bat (*Myotis sodalis*) – Doddridge County, West Virginia

Pritchard Intermodal Facility Habitat Availability and Assessment Report for the Indiana Bat (*Myotis sodalis*) – Wayne County, West Virginia

Richard Garry Pad Habitat Availability and Assessment Report for the Indiana Bat (*Myotis sodalis*) – Doddridge County, West Virginia

Robert-Melody Pad Habitat Availability and Assessment Report for the Indiana Bat (*Myotis sodalis*) – Doddridge County, West Virginia

Terry Snider Pad Habitat Availability and Assessment Report for the Indiana Bat (*Myotis sodalis*) – Tyler County, West Virginia

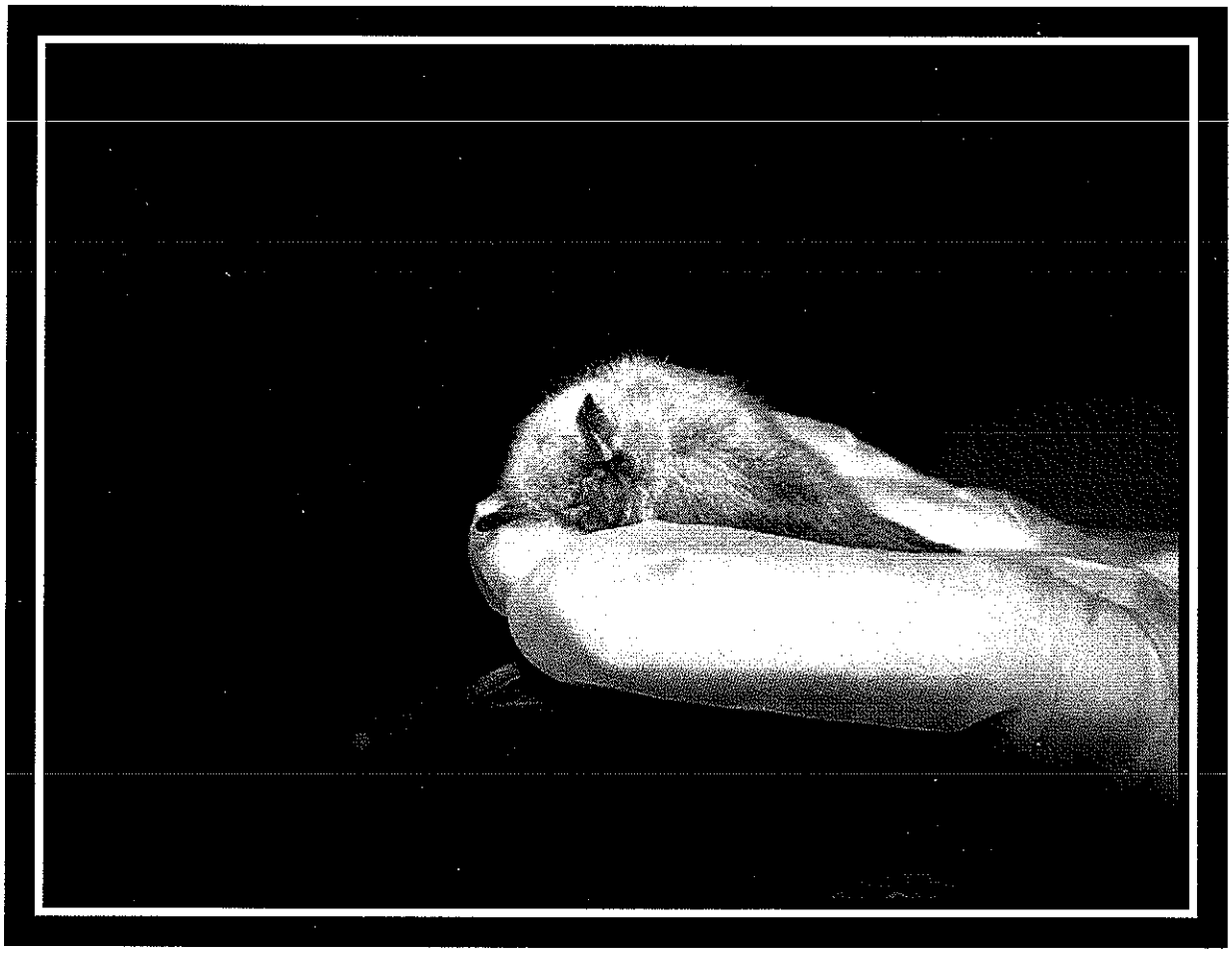
AllStar Personnel Previous Experience

Sheila Captain and/or Michael Farmer – Qualified Indiana Bat Surveyor (WV) and Qualified Bat Identifier (PA). Mist-netting experience in PA, WV, KY, NJ, MI, NY, OH, and MD Indiana bats caught in Seneca County, OH (2011), Fort Drum, NY (2010), Greene County, PA (2008), and River Raisin Watershed, MI (2007)

Milu Karp - Thesis: Use of Prescribed Fire and Herbicide to Enhance Northern Myotis Roosting Habitat in Hardwood Forests

Eric Schrodder - Thesis: Indiana Bat (Myotis sodalis) Migratory Routes and Summer Habitat Characteristics Concerning Wind Farms in Iowa and Illinois

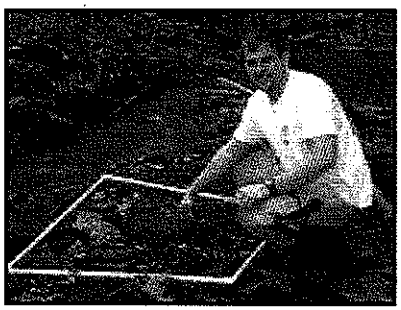
Qualifications of Key Personnel: Resumes



Tricolored Bat (*Perimyotis subflavus*) – Sheila Captain

Ryan L. Ward

- *Senior Environmental Scientist / Project Manager*



Ryan Ward is an owner of AllStar Ecology and has worked throughout the United States on various projects with an emphasis on wildlife research. Mr. Ward has studied in environments in Texas, New Mexico, Arizona, and Oklahoma. He also has extensive regulatory experience throughout the Mid-Atlantic region, especially in West Virginia and Virginia where he is a Certified Professional Wetland Delineator. Mr. Ward specializes in stream and wetland issues including delineation, compensatory mitigation, permitting, natural stream design, and wetland restoration.

Education

M.S. (2005): Wildlife and Fisheries Resources, West Virginia University, Morgantown, WV.

B.S. (2003): Wildlife and Fisheries Management (Minor: Biology), Texas Tech University, Lubbock, TX.

Experience

Senior Environmental Scientist/Project Manager - AllStar Ecology, LLC	2009-current
Owner/Operator - Spring Peeper Farm & Nursery	2007-current
Environmental Scientist/President - Mountain State Aquatic Resources, LLC	2007-2009
Environmental Scientist - Virginia Waters and Wetlands Inc., Warrenton, VA.	2005-2009
Research Assistant - West Virginia University, Morgantown, WV	2003-2005
Research Technician - Texas Cooperative F&W Research Unit, Lubbock, TX	2002-2003
Forestry Technician GS-462-4 - USDA Forest Service, Carlsbad, NM	2001
Research Technician - Texas Tech University, Lubbock, TX	2000

Professional Development

Virginia Professional Wetland Delineator (#3402000105)
Society of Wetland Scientists
The Wildlife Society
West Virginia University Natural Stream Design Short Courses
-Introduction to Stream Functions and Processes—Course 1
-Methods for Stream Assessment and Analysis—Course 2
North Carolina State Stream Restoration Program
-Level III: Advanced Stream Restoration Design Principles
-RC 401 Construction Practices for Stream Restoration
WVDEP—Construction Storm Water 101 Workshop
ISA Certified Arborist (MA-4989A)
U.S. Forest Service/Roane-Jackson Technical Center--Wetland Construction Workshop

Wetland Training Institute, Inc—Basic Wetland Delineation Course
Ohio Rapid Assessment Method v 5.0 Training Course (Ecological Training Services)
Ohio Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI) Training Course (Midwest Biological Institute)
American Heart Association CPR and First Aid Training
PEC Safeland Basic (Bickerstaff Safety Consulting)

Publications

Ward, R. L., J. T Anderson, and J. T. Petty. 2008. Effects of road crossing on stream and streamside salamanders. Journal of Wildlife Management 72:760-771.

Anderson, J. T., J. D. Osbourne, and **R. L. Ward**. 2004. Integrating riparian restoration to promote wildlife habitat with natural stream channel design on mine land habitats. Proceedings of the 21st Annual American Society of Mining and Reclamation Meeting 21:47-73.

Kamler, J. F., W. B. Ballard, J. C. Bullock, D. A. Butler, and **R. L. Ward**. 2003. Prey remains found in great hormed owl (*Bubo virginianus*) pellets from Union County, New Mexico. The New Mexico Journal of Science 43:68-72.

Walter E. Veselka

- *Senior Environmental Scientist / Project Manager*

Walter Veselka is an owner in AllStar Ecology and has worked throughout the United States with focuses on industry consulting and environmental research. Mr. Veselka specializes in wildlife biology and wetland issues with specific focus on the ecological and functional assessment of wetlands for regulatory purposes and mitigation. Mr. Veselka is an experienced wetland scientist and has worked on projects for oil/gas, coal, and residential/commercial development.

Education

M.S. (2008): Wildlife and Fisheries Resources, West Virginia University, Morgantown, WV.

B.S. (2000): Wildlife Ecology, University of Maine, Orono, ME.

Experience

Senior Environmental Scientist/Project Manager - AllStar Ecology, LLC	2007-current
Wildlife Biologist - WVU Research Corporation, Morgantown, WV	2008-2012
Research Assistant - West Virginia University, Morgantown, WV	2005-2008
Staff Biologist - Impact Sciences, Inc., CA	2004
Biological Technician - US National Park Service, CA	2004
Biological Consultant - Clark Biological Consulting, Plumas County, CA	2004
Biological Consultant - BioEnvironmental Associates, Kern County, CA	2004
Desert Tortoise Consultant - Southern Nevada Ecology, Inc., Clark County, NV	2003
Desert Tortoise Consultant - Nevada Biological Consulting, Clark County, NV	2003
Desert Tortoise Consultant - Psomas Inc., Imperil County, CA	2003
Biologist - Garcia and Associates Inc., San Bernardino County, CA	2002-2003
Wildlife Biologist - US Forest Service, Giant Sequoia NP	2001-2002
Environmental Inspector - Blanton and Associates Inc., CA	2000-2001
Research Technician - Virginia Tech University, Montgomery County, VA	2000
Wildlife Research Technician - Massachusetts Military Reservation, Cape Cod	2000
Research Assistant - University of Maine, Sagadohoc County, ME	1999

Professional Development

The Wildlife Society
The Society of Wetland Scientists
Army Corps of Engineers, U.S. EPA, USDA Natural Resources Conservation Service
—Reg V Interagency Federal Wetland Delineation Training
WVDEP—Construction Storm Water 101 Workshop

U.S. Forest Service/ Roane-Jackson Technical Center—Wetland Construction Workshop
Canaan Valley Institute/ WVDEP —A New Direction: Approaches and Strategies for Stream Mitigation in West Virginia
WVDEP—Smart Solutions: Community-based Decentralized Wastewater Management
Ohio Rapid Assessment Method v 5.0 Training Course (Ecological Training Services)
Ohio Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI) Training Course (Midwest Biological Institute)
American Heart Association CPR and First Aid Training

Publications

Veselka, W., Anderson J.T., Kordek, W. (2009). Using dual classifications in the development of avian wetland indices of biological integrity for wetlands in West Virginia, USA. Environmental Monitoring and Assessment. *Published online 29 April 2009.*

Veselka, Walter (2008). Developing Wetland Indices of Biological Integrity for Wetlands in West Virginia. M.S. Thesis. West Virginia University

Veselka, W., Anderson J.T., Kordek, W. (2008) "*Getting the most from wetland Indices of Biological Integrity*„ A presentation to the Annual Meeting of Society of Wetland Scientists. Washington, D.C. .

Veselka, W., Anderson J.T., Kordek, W. (2007) "*Comparing Cowardin and Hydrogeomorphic Classifications in Building a Wetland Bird Index of Biotic Integrity for West Virginia*„ A presentation to the Annual Meeting of Society of Wetland Scientists. Sacremento, CA.

Christ, M., Hansen, E., **Veselka W.** (2007) "*A Framework for Rivers and Streams Nutrient Criteria in West Virginia.*„ West Virginia Rivers Coalition Report submitted to WV Department of Environmental Protection.

Veselka, W., Anderson J.T., Kordek, W. (2006) "*Using Landscape Characteristics to Explain Avian Communities in Wetlands of West Virginia.*„ A presentation to the Northeast Associations of Fish and Wildlife Agencies. Burlington, VT.

Gregory L. Short Jr.

-Senior Botanist / Project Manager

Greg Short is an owner in AllStar Ecology and has worked throughout the eastern United States conducting vegetation surveys and threatened & endangered species surveys. Mr. Short has conducted floristic inventories in Ohio, Pennsylvania, Virginia, West Virginia, Delaware, and New Jersey. He has been affiliated with various private, state, and federal agencies conducting threatened & endangered species surveys for plants and mammals throughout Pennsylvania and West Virginia. Mr. Short is an experienced wetland delineator and has worked on projects for oil/gas, coal, and residential/commercial development.

Education

A.S. (2005): Natural Resources and Wildlife, Garrett College of Maryland, McHenry, MD

Experience

Senior Environmental Scientist/Botanist - AllStar Ecology, LLC	2009-current
Ecologist/Botanist - USDA Forest Service Research Station, Dunbar, WV	2009
Environmental Resource Specialist III - Hatch Mott MacDonald, Morgantown	2007- 2009
Ecologist/Botanist - USDA Forest Service, White Sulphur Springs, WV	2007
Field Botanist/Biological Technician - USDA Forest Service, Morgantown, WV	2006
Ecology Project Assistant - WV Natural Heritage Program WVDNR, Elkins, WV	2005-2006
Invasive Species Technician - WVDNR, Kingwood, WV	2004
Biological Science Technician - WVDNR, Kingwood, WV	2003

Professional Development

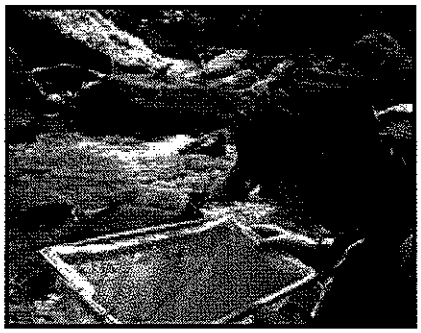
Society of Wetland Scientists
USDA Forest Service Northern Research Station, Vegetation Specialist Certification
Richard Chinn's 40 Hour Wetland Delineation Certification
PADI Advanced Scuba Diver Certification
Pennsylvania Wild Plant Management Permit
Recognized botanist to conduct T&E Species by the US Fish & Wildlife, West Virginia DNR, and Pennsylvania DCNR
Ohio Rapid Assessment Method v 5.0 Training Course (Ecological Training Services)
Ohio Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI) Training Course (Midwest Biological Institute)
American Heart Association CPR and First Aid Training

Publications

Streets, B. P., J. P. Vanderhorst, C. Good, and **G. L. Short**. 2008. Floristic Inventory of the National Bluestone Scenic River. National Park Service.
http://www.nps.gov/nero/science/FINAL/Blue_floristic/Blue_flora.htm

Sarah E. Veselka

- Senior Environmental Scientist / Project Manager



Sarah Veselka is an owner of AllStar Ecology and specializes in stream ecosystems. She has over twelve years of experience working within aquatic research laboratories and for non-profit organizations conducting stream water quality monitoring, and fish and macroinvertebrate community assessments. Ms. Veselka has also served as an environmental consultant in Colorado, Georgia and in West Virginia. Her skills include southern and central Appalachian freshwater fish, mussel, and aquatic benthic macroinvertebrate identification.

Education

M.S. (2004): Wildlife and Fisheries Resources, West Virginia University, Morgantown, WV.

B.S. (2000): Biology, University of Georgia, Athens, GA

Experience

Senior Environmental Scientist/Project Manager - AllStar Ecology, LLC	2007-current
Executive Director - Friends of Deckers Creek, Morgantown, WV	2007-2012
Environmental Consultant - Downstream Strategies, Morgantown WV	2006 -2008
Americorps/Office of Surface Mining VISTA - Friends of Deckers Creek	2006 -2007
Environmental Research Teacher - Regional Math & Science Center, MD	2006
Laboratory Technician II - West Virginia University, Morgantown, WV	2005-2006
Fisheries Consultant - Water Quality Technology, Inc. Fort Collins, CO	2004 -2005
Graduate Research Assistant, PhD Candidate - WVU, Morgantown, WV	2005
Graduate Research Assistant - West Virginia University, Morgantown, WV	2002- 2005
Research Technician I-III - University of Georgia, Athens, GA	2001-2002

Professional Development

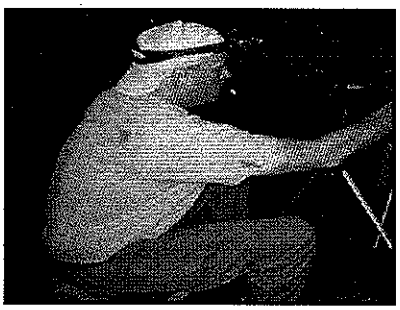
Certified Family Taxonomist - North American Benthological Society
WV Freshwater Mussel Identification – WVDNR (40 hour training course)
The Swamp School: Wetland Delineation and Regional Supplements (40 hour training course)
Ohio Rapid Assessment Method v 5.0 Training Course (Ecological Training Services)
Ohio Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI) Training Course (Midwest Biological Institute)
Friends of Deckers Creek Board of Directors
American Heart Association CPR and First Aid Training
WVU Division of Forestry Graduate Student of the Year
The American Fisheries Society
PADI Open Water Scuba Diver Certification

Publications

McClurg (now Veselka), S.E., J.T. Petty, P. Mazik, and J. Clayton. 2007. Stream ecosystem response to limestone treatment in acid impacted watersheds of the Allegheny Plateau, West Virginia. Ecological Applications. 17(4):1087-1104.

Jack L. Wallace

-Rare, Threatened and Endangered (RTE) Animal Specialist



Jack Wallace joined the AllStar Ecology team in 2012. Mr. Wallace is a 24 year RTE specialist with the West Virginia Division of Natural Resources, and has an intimate knowledge of West Virginia's imperiled species and their habitats and requirements. Mr. Wallace has worked with private, state, federal and international entities on a variety of RTE issues in West Virginia, Kentucky, Maryland, Pennsylvania, Tennessee and Virginia. Mr. Wallace has extensive experience working with West Virginia endemics (WV northern flying squirrel, Cheat Mountain Salamander, and Cheat threetooth snail), as well as bats (Indiana and VA big-eared), mussels, and birds of prey (bald and golden eagles and peregrine falcons).

Education

B.S. (1990): Wildlife Management. West Virginia University, Morgantown, WV

Experience

RTE Specialist - AllStar Ecology, LLC	2012-current
Endangered Species Specialist - WV Division of Natural Resources, Elkins, WV	1988-2012
Contract Trapper - USDA Forest Service, Marlinton WV	1995

Professional Development

PADI and YMCA SCUBA Certified, including Advanced Open Water, SLAM (SCUBA Lifesaving and Accident Management), Emergency Oxygen Administration, Public Safety Diver, Drysuit Diver
Qualified by USFWS, USFS and WVDNR to do biological inventory work with RTE species
Sonobat Acoustic Sampling Training Workshop, Bat Conservation and Management, Inc.
Introduction to Cave Rescue, National Speleological Society
Cave and Mine Gating Workshop, American Cave Conservation Association

Publications

Clayton, J.L., C.W. Stihler, and **J.L. Wallace**. 2001. Status of and potential impacts to the freshwater bivalves (Unionidae) in Patterson Creek, West Virginia. Northeast Naturalist (8(2):179-188.

Stihler, C.W., **J.L. Wallace**, and A. Jones. 1998. Use of Elkhorn Cave, Grant County, West Virginia, by Virginia big-eared bats (*Corynorhinus townsendii virginianus*) (abstract). WV Acad. Sci., Proc. 70(1):5.

Stihler, C.W., **J.L. Wallace**, and A. Jones. 1997. Use of Elkhorn Cave, Grant County, West Virginia, by a bachelor colony of *Corynorhinus townsendii virginianus* (abstract). Bat Research News. 38(4):130.

Stihler, C.W., V.M. Dalton, **J.L.Wallace**, and V. Brack, Jr. 1996. Radio telemetry and light tagging studies of *Corynorhinus townsendii virginianus*: Preliminary results (abstract). Bat Research News. 37(4):152

Stihler, C.W. and **J.L. Wallace**. 1994. Monitoring of nest boxes for the endangered northern flying squirrel (*Glaucomys sabrinus fuscus*) on the Monongahela National Forest, Mower Tract, 1992-1993. Report prepared for the USDA Forest Service, Monongahela National Forest.

Stihler, C.W. and **J.L. Wallace.** 1993. Results of surveys for eastern woodrats, (*Neotoma floridana magister*) at 16 sites on the Monongahela National Forest. Report prepared for the USDA Forest Service, Monongahela National Forest.

Stihler, C.W. and **J. Wallace**. 1988-2011. Endangered Species Federal Assistance Performance Report, Project WVDNR (yearly report).

Sheila Captain

- *Environmental Scientist / Bat Specialist*

Sheila Captain is an Environmental Scientist and Bat Specialist for AllStar Ecology with experience through the Mid-Atlantic and Midwest regions. Ms. Captain has a background in wildlife research and now specializes in endangered bat surveys and stream and wetland delineations. Ms. Captain is permitted to survey for bats in West Virginia, including bat habitat assessment, acoustic sampling, mist-netting and radio-telemetry.

Education

B.S. (2008): Biology - concentration in Ecology (Minor: Chemistry), Eastern Michigan University, Ypsilanti, MI.

Experience

Environmental Scientist - AllStar Ecology, LLC	2012 -current
Biological Field Technician - Environmental Solutions and Innovations	2008-2012
Zoological Assistant - Eastern Michigan University	2007

Professional Development

Qualified Indiana Bat Surveyor – WV
Qualified Bat Identifier - PA
Swamp School – 40 hour wetland delineation training course
Ohio Rapid Assessment Method v 5.0 Training Course (Ecological Training Services)
Midwest Bat Working Group
American Heart Association First Aid and CPR certified
PEC Safeland Basic (Bickerstaff Safety Consulting)
BCID and Kaleidoscope Automated Acoustic Bat ID Software Workshop – Muncie, IN

Michael S. Farmer

-Environmental Scientist / Bat Specialist

Michael Farmer is an Environmental Scientist and Bat Specialist for AllStar Ecology and specializes in bat ecology and habitats, and in stream and wetland issues including delineation, mapping, and permitting. Mr. Farmer has worked in and mist netted as well as acoustically surveyed bats in environments in Missouri, Michigan, Indiana, Illinois, Wisconsin, West Virginia, Ohio, Pennsylvania, Maryland, New Jersey, New York, North Dakota, Kentucky and Tennessee. He has handled thousands of bats, including the endangered Indiana Bat, has tracked many Indiana Bats and other species using radio telemetry, and performed many roost-exit population counts at maternity colony bat roosts.

Education

B.S. (2011): Biology, Eastern Michigan University, Ypsilanti, MI.

Experience

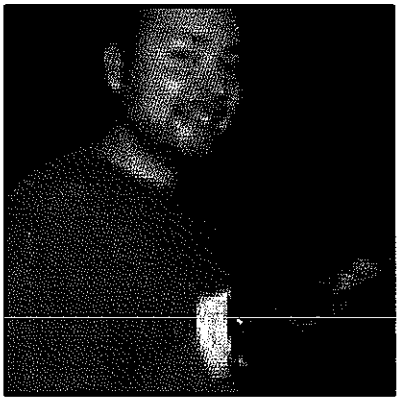
Environmental Scientist- AllStar Ecology, LLC	2012-current
Environmental Scientist- ESI Inc, Cincinatti, OH	2009-2012
Environmental Scientist - BHE Environmental, Cincinatti, OH	2007-2008
Environmental Scientist Technician - Sleeping Bear National Park, Empire, MI	2006
Research Assistant - Eastern Michigan University, Ypsilanti, MI	2003-2005

Professional Development

Qualified Indiana Bat Surveyor – WV
Qualified Bat Identifier - PA
Swamp School 40 hour Wetland Delineation Course
Ohio Rapid Assessment Method v. 5.0 Training Course (Ecological Training Services)
Midwest Bat Working Group
Consol Mine Site safety training
American Heart Association CPR and First Aid Training
Organization for Bat Conservation staff volunteer
PEC Safeland Basic (Bickerstaff Safety Consulting)
BCID and Kaleidoscope Automated Acoustic Bat ID Software Workshop – Muncie, IN

Eric Schrodder

-Environmental Scientist / Bat Specialist



Eric Schrodder is an Environmental Scientist and Bat Specialist at AllStar Ecology and has worked primarily in the Midwestern and Eastern United States with a focus on bat biology, wind energy, and nuisance animal management. He has participated in both energy and wildlife related research and specializes in wildlife biology and natural, renewable resource related issues concerning wildlife habitat selection. He has been affiliated with various private, state, and federal agencies conducting surveys for bird and bat species killed by wind turbines, constructing mist nets for the capture of endangered bats, and surveys to characterize maternity colony habitat preference. He has handled thousands of bats, including the endangered Indiana Bat, has tracked many Indiana Bats and other species using radio telemetry, and performed many roost-exit population counts at maternity colony bat roosts.

Education

M.S. (2012) Biology, Western Illinois University, Macomb, Illinois
Thesis: Indiana Bat (*Myotis sodalis*) Migratory Routes and Summer Habitat Characteristics Concerning Wind Farms in Iowa and Illinois
Post-Baccalaureate Certificate in Environmental GIS (2012), Western Illinois University, Macomb, Illinois
B.S. (2010), Iowa State University, Ames, Iowa

Experience

Environmental Scientist/Wildlife Biologist – AllStar Ecology, LLC	2013-current
Wildlife Biologist - Trutech, Inc.-Murfreesboro, TN	2013
Field Tech - Western Ecosystems Technology, Inc. -Bishop Hill, IL	2012
Biological Tech - Apogee Environmental and Archaeological - Charleston, WV	2012
Research Assistant - Western Illinois University- Institute of Rural Affairs – Macomb, IL	2012
Research Assistant- Western Illinois University-Quad Cities - Moline, Illinois-	2010-2011

Professional Development

Radio telemetry and GPS experience

Field Technician-San Diego State University- Sunol, California	2010
Field Technician- Iowa State University- Gulf Shores, Alabama	2009
Lab Technician-Iowa State University- Ames, Iowa	2009
Independent Researcher-Iowa State University-Ames, Iowa	2009
Maintenance Technician – Rock Island Park Board- Rock Island, Illinois	2006-2007

Milu Karp

-Environmental Scientist / Bat Specialist

Milu Karp is an Environmental Scientist and Bat Specialist at AllStar Ecology that has worked in both the Western and Eastern United States with a focus on bat, small and large mammal, and avian biology. She has participated in sensitive species surveys via point counts, GPS/radio telemetry monitoring, mark-recapture, and mist-netting to determine habitat use and selection by numerous species. Her graduate work investigated the effects of both fire and herbicide, as forest management tools, and their potential to generate Indiana bat habitat, particularly the creation of snags and forest gaps. Ms. Karp has handled thousands of bats, including the endangered Indiana Bat, has tracked many Indiana Bats and other species using radio telemetry, and performed many roost-exit population counts at maternity colony bat roosts.

Education

M.S. (2013) Wildlife & Fisheries Resources: West Virginia University, Morgantown, WV
Thesis: Use of Prescribed Fire and Herbicide to Enhance Northern Myotis Roosting Habitat in Hardwood Forests
Certificate (2009) Wetland Science & Management: University of Washington, Seattle, WA
M.A. (2002) Teaching: Southern Oregon University, Ashland, OR
B:S. (1998) The Evergreen State College, Olympia, WV

Experience

Environmental Scientist/Wildlife Biologist – AllStar Ecology, LLC	2013-current
Research Technician - Teton Science Schools: Conservation Research Center, Jackson, WY	2010
Field Team Leader - Earthwatch International	2010
Sensitive Species Surveyor - Western Ecosystems Technology, Inc., Walla Walla, WA	2010
Sensitive Species Surveyor - US Bureau of Land Management, Medford, OR	2001
Wildlife Technician Pitkin County Land Management, Aspen, CO	2000
Wildlife Technician - USDA Forest Service, Gunnison, CO	1999
Migration Surveyor - Hawkwatch International, Rogers Pass, MO	1999
Biology Intern - US Fish & Wildlife Service, Maybell, CO	1998

Professional Development

The Wildlife Society
Bat Conservation International
The Nature Conservancy

Society for Conservation Biology
CDW sampling of White-tailed Deer, Ligonier, PA
Electroshocking Project Assistance, Morgantown, WV
White-ruffed Manakin Behavioral Study, Rara Avis, Costa Rica, C.A.
Northern Saw-Whet Owl Banding Project, Valley Falls State Park, WV
Mule Deer Trapping Project, Conservation Research Center, Jackson, WY
Suquamish Tribe & WA State Dept. of Fish & Wildlife Beach Sein, Suquamish Tribe, WA State Department of Fish & Wildlife, City of Bainbridge Island, and US Navy
King County (WA) Land Management Wetlands Mapping Project, King County WA
Washington Wildlife & Recreation Coalition, Seattle, WA

Publications

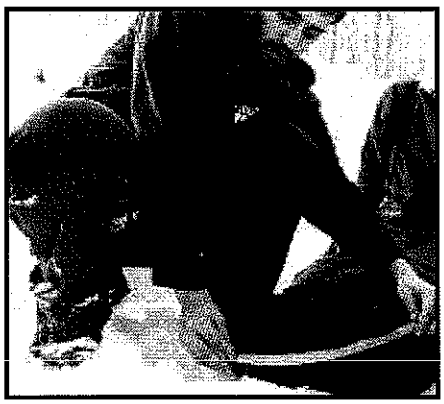
Hall E., J. McCabe, S. Fagan and M. Karp. 2010. Monitoring avian productivity and survivorship in Jackson Hole, Wyoming. Annual Report.

Hall E., M. Karp, and J. McCabe. 2010. Understanding songbird responses to human development in riparian corridors in Jackson Hole, Wyoming. Annual report. http://www.earthwatch.org/FieldReportpdf/Hall_FieldReport2010.pdf

Hall E., J. McCabe, M. Karp, C. Smith and D. Wachob. 2010. The effects of human development on avian populations along riparian corridors in Jackson Hole, Wyoming. Oral presentation. The Wildlife Society Wyoming Chapter.

Jesse L. De La Cruz

- Environmental Scientist/Wildlife Biologist



Jesse De La Cruz is an Environmental Scientist and Wildlife Biologist at AllStar Ecology and has worked primarily in West Virginia with a focus on environmental research and natural resource industrial activities. He has participated in both forestry and wildlife related research and specializes in wildlife biology, natural resource, and forestry related issues with a specific focus on wildlife habitat availability and selection. He has been affiliated with various private, state, and federal agencies conducting surveys for invasive plants and trees, forest inventory, small mammal surveys, big game home-range monitoring, and Indiana bat habitat assessments in the states of West Virginia and Pennsylvania. Mr. De La Cruz is an experienced wetland delineator and has worked on projects primarily for the oil and gas industry.

Education

M.S. (2012): Wildlife and Fisheries Resources, West Virginia University, Morgantown, WV.

B.S. (2009): Natural Resource Management, Glenville State College, Glenville, WV.

A.S. (2008): Forestry, Glenville State College, Glenville, WV.

Experience

Environmental Scientist/Wildlife Biologist - AllStar Ecology, LLC	2012-present
Graduate Research Assistant - West Virginia University, Morgantown, WV	2009-2012
Forest Technician - USFS, Fernow Experimental Forest, Parsons WV	2009
Undergraduate Research Assistant - Glenville State College, Glenville, WV	2008-2009

Professional Development

Society of American Foresters
North American Forest Technician Honorary - Council of Eastern Forest Technician Schools
West Virginia Association of Science Top Poster Presenter
Outstanding Student Award: Forest Technology, Glenville State College
The Wildlife Society
Ohio Rapid Assessment Method v 5.0 Training Course (Ecological Training Services)
Ohio Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI) Training Course (Midwest Biological Institute)
Safe Capture International Inc. - Chemical Immobilization of Animals
The Swamp School – Wetland Delineation and Regional Supplements (40 hour training course)
American Heart Association First Aid and CPR Training
PEC Safeland Basic (Bickerstaff Safety Consulting)
BCID and Kaleidoscope Automated Acoustic Bat ID Software Workshop – Muncie, IN

Publications

De La Cruz, Jesse, S.E. Rauch, and J.T. Anderson. Habitat Use and Selection by Male Eastern Wild Turkeys (*Meleagris gallopavo silvestris*) in West Virginia. West Virginia University-Department of Natural Resource Conservation, 2012.

R. Gazal, **J. De La Cruz** and M. Vavrek. 2009. Influence of roads on the dispersion of invasive plants in an Appalachian forest. Society of American Foresters National Convention, Orlando, FL. Sep. 30-Oct. 4, 2009.

De La Cruz, Jesse, Radcliff, Troy and Gazal, Rico. 2009. Influence of light regime and shade tolerance on leaf structure of native species and *Ailanthus*. WV Academy of Science, Glenville State College, Glenville, WV, March 21, 2009. (Judged as the Best Student Presentation)

Radcliff, Troy; **De La Cruz, Jesse** and Gazal, Rico. 2009. Leaf structure comparison among growth stages of *Ailanthus*. Undergraduate Research Day at the Capitol, Charleston, WV. January 2009.

De La Cruz, Jesse, Radcliff, Troy and Gazal, Rico. 2008. Influence of light regime and shade tolerance on leaf structure of native species and *Ailanthus altissima*. Chi Beta Phi 61st National Conference, October 18, 2008, Glenville State College, Glenville, WV.

Dylan K. Fowler

- *Environmental Scientist*

Dylan Fowler joined the AllStar Ecology team in 2011. Mr. Fowler has extensive experience in wildlife research including avian, bats, and insects. He also has significant botanical experience within the Mid-Atlantic region. Mr. Fowler has worked extensively on oil and gas projects delineating and assessing streams and wetlands for permitting and construction avoidance, as well as GIS mapping and reporting. He has also worked on pipeline routing in National Forest areas and performed botanical surveys for rare, threatened, and endangered plant species for highway construction. In addition, Mr. Fowler has over ten years of experience conducting breeding bird surveys in WV.

Education

B.S. (2010): Wildlife and Fisheries Resources, West Virginia University, Morgantown, WV

A.S. (2008): Natural Resources and Wildlife Technology, Garrett College, McHenry, MD

Experience

Environmental Scientist - AllStar Ecology, LLC	2011-current
Plant Technician - USDA Forest Service, Morgantown, WV	2011
Seasonal Biologist - MD DNR Wildlife and Heritage Program, Frostburg, MD	2008-2009
Park Grounds Maintenance/Supervisor - University of MD, Bittinger, MD	2004-2008
Gypsy Moth Surveyor - MD Extension Service, Mt. Lake Park, MD	2006-2007

Professional Development

Society of Wetland Scientists
The Wildlife Society
Certified Commercial Pesticide Applicator
SonoBat Software Training Workshop, Bat Conservation and Management, Inc.
American Heart Association CPR and First Aid Training
Wildlands Firefighting Certificates, S190 and S130
MD Boating Safety Education Certificate
The Swamp School: Wetland Delineation and Regional Supplements (40 hour course)
Office of Miners Health, Safety and Training (OMHST) (24 hour course)
Ohio Rapid Assessment Method v 5.0 Training Course (Ecological Training Services)
Ohio Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI) Training Course (Midwest Biological Institute)
PEC Safeland Basic (Bickerstaff Safety Consulting)
BCID and Kaleidoscope Automated Acoustic Bat ID Software Workshop – Muncie, IN

Kevan A. Damm

- *Environmental Scientist*

Kevan Damm is an Environmental Scientist with AllStar Ecology and has worked throughout the United States on various projects with an emphasis on wildlife research. Mr. Damm has participated in various wildlife studies in West Virginia, New Mexico, Utah, and Idaho. He also has experience in macroinvertebrate sorting, water quality sampling, archaeological surveys, and using Geographic Information Systems software to map aquatic resources and assess potential impacts to streams and wetlands. Mr. Damm specializes in stream and wetland delineation, permitting, soil assessment and vegetation identification.

Education

B.S. (1998): Wildlife and Fisheries Resources, West Virginia University, Morgantown, WV.

Experience

Environmental Scientist - AllStar Ecology, LLC 2012-current Biological
Science Technician - USDA Forest Service, McCall, ID 2001
Wildlife Technician - Idaho Fish and Game, Boise, ID 2001
Biological Science Technician - USDA Forest Service, Silver City, NM 1999
Observer - HawkWatch International, Kamas UT 1999
Biological Science Technician - USDA Forest Service, Elkins, WV 1998

Professional Development

Ohio Rapid Assessment Method v 5.0 Training Course (Ecological Training Services)
Ohio Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI) Training Course (Midwest Biological Institute)
Swamp School, LLC - 40 Hour Wetland Delineation Training
American Heart Association CPR and First Aid Training
PEC Safeland Basic (Bickerstaff Safety Consulting)

Terry L. Burhans

- *Environmental Scientist / Forester*

Terry Burhans, AllStar Ecology Forester and Environmental Scientist, has worked in various locations in the Southwestern and Northeastern Regions of the United States. He has supported a range of projects for the U.S. Forest Service and various educational institutions specializing in Forestry, Entomology and Natural Resource Management. Mr. Burhans has studied environments broadly in Southern California and West Virginia, focusing on Watershed Management, Soil Taxonomy and Classification, Forestry and Forest Resource Management, Forest Pest Management and Invasive Species Control. Currently, Mr. Burhans focuses on stream and wetland issues including delineations and currently specializes in CWA permitting with the United States Army Corps of Engineers.

Education

M.S. (2012): Forest Resource Management, West Virginia University, Morgantown WV.

B.S. (2010): Environmental Sciences (Emphasis: Soil and Water Sciences), University of California, Riverside, Riverside, CA.

Experience

Forester/Environmental Scientist - AllStar Ecology, LLC.	2012-Current
Forestry Technician - U.S. Forest Service, Morgantown, WV	2011-2012
Forestry M.S. Student - West Virginia University, Morgantown, WV.	2010-2012
Video Editing Technician - WVU, USFS, Morgantown, WV	2010-2011
Entomology Lab Technician - U.C. Riverside, Riverside, CA.	2007-2010
Environmental Sciences B.S. Student - U.C. Riverside, Riverside, CA	2004-2010

Professional Development

Xi Sigma Pi Forestry Honor Society
Society of American Foresters
Society of Environmental Professionals, WVU
The Wildlife Society
Certified Trained Wetland Delineator (Swamp School, LLC.)
Ohio Rapid Assessment Method v 5.0 Training Course (Ecological Training Services)
Ohio Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI) Training Course (Midwest Biological Institute)
AHA CPR and First Aid

Publications

Burhans, T.L. 2012. Efficacy of varying rates of herbicide and surfactant for the control of understory oriental bittersweet (Celastrus orbiculatus Thunb.) plants in an Appalachian hardwood forest. WEST VIRGINIA UNIVERSITY

Burhans, T.L. Dave McGill, Rakesh Chandran, and Cindy Huebner. 2012 Video: Common Invasive Plants of West Virginia.

Literature Cited

American Society of Mammalogists. 1998. Guidelines for the capture, handling and care of mammals. Journal of Mammalogy 79:1416-1431.

Britzke, E.R, B.A. Slack, M.P. Armstrong, and S.C. Loeb. 2010. Effects of orientation and weatherproofing on the detection of bat echolocation calls. Journal of Fish and Wildlife Management 1(2):136-141.

Canadian Council on Animal Care (CCAC). 2003. CCAC species-specific recommendations on bats. 9pp. Available at: http://www.ccac.ca/en/CCAC_Programs/Guidelines_Policies/GDLINES/BatsFinal20May03.htm (Accessed October 30, 2008).

Gannon, W.L., R.S. Sikes, and the Animal Care and Use Committee of the American Society of Mammologists. 2007. Guidelines of the American Society of Mammologists for the use of wild mammals in research. Journal of Mammalogy 88:809-823.

Hayes, J. P. 2000. Assumption and practical considerations in the design and interpretation of echolocation-monitoring studies. Acta Chiropterologica 2:225-236.

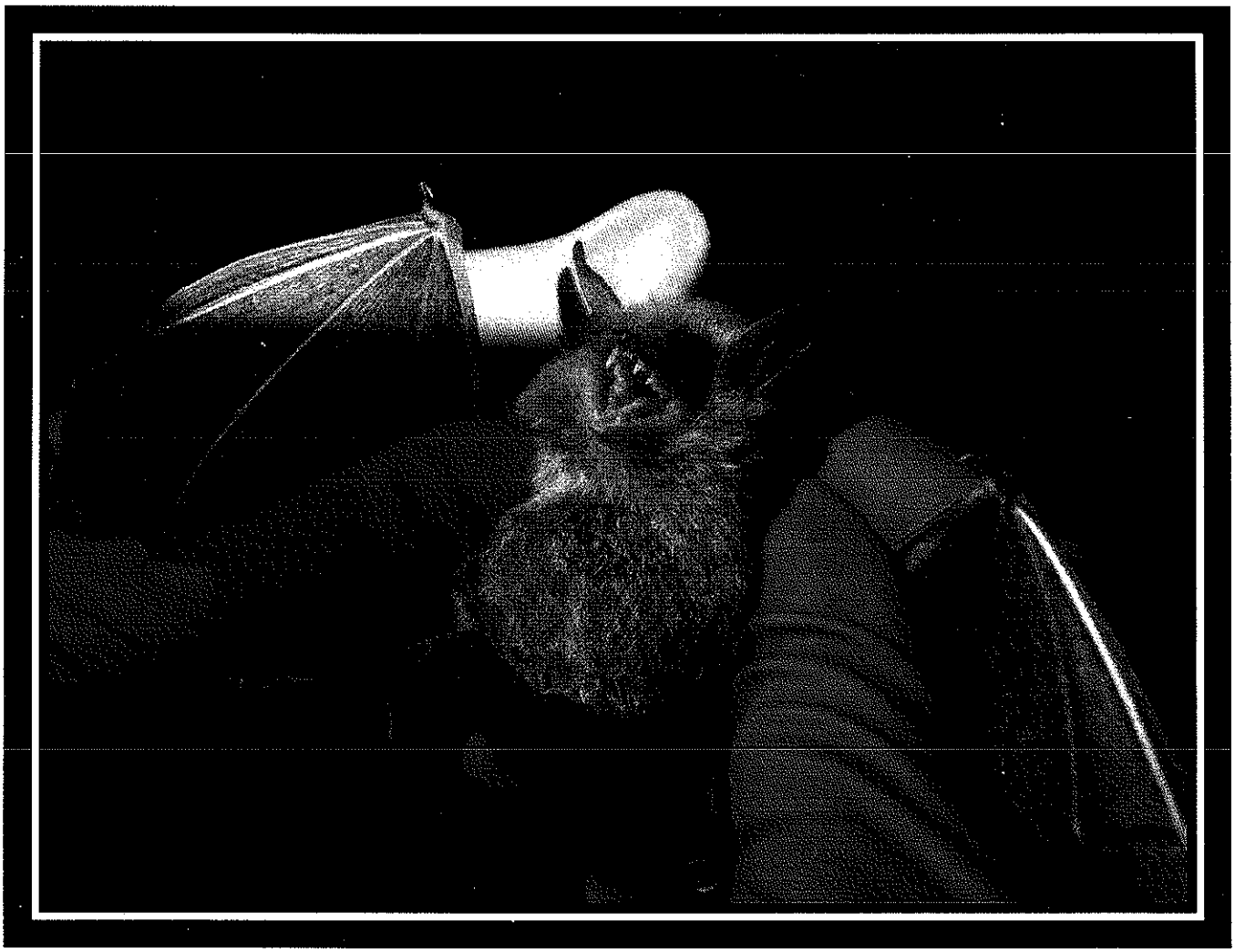
Kunz, T.H., R. Hodgkison, and C.D. Weise. 2009. Methods of capturing and handling bats. Pp. 3-35 *in* T.H. Kunz and S. Parsons (eds.), Ecological and behavioral methods for the study of bats, second edition. The Johns Hopkins University Press, Baltimore, Maryland.

Kurta, A., and S. Murray. 2002. Philopatry and migration of banded Indiana Bats (*Myotis sodalis*) and effects of radio transmitters. Journal of Mammalogy 83:585-589.

Reichard, J.D., and T.H. Kunz. 2009. White-nose syndrome inflicts lasting injuries to the wings of little brown myotis (Myotis lucifugus). Acta Chiropterologica 11: 457-464.

Weller, T. J., and C. J. Zabel. 2002. Variation in bat detections due to detector orientation in a forest. Wildlife Society Bulletin 30:922-930.

Appendix A: USFWS Data Sheets



Northern Long-eared Bat (*Myotis septentrionalis*) – Milu Karp

PHASE 1 SUMMER HABITAT ASSESSMENTS

INDIANA BAT HABITAT ASSESSMENT DATASHEET

Project Name:_____ Date:_____

Township/Range/Section:_____

Lat Long/UTM/ Zone:_____ Surveyor:_____

Brief Project Description

Project Area

	Total Acres	Forest Acres	Open Acres
Project			

	Completely cleared	Partially cleared (will leave trees)	Preserve acres- no clearing
Proposed Tree Removal (ac)			

Vegetation Cover Types

Pre-Project	Post-Project

Landscape within 5 mile radius

Flight corridors to other forested areas?
Describe Adjacent Properties (e.g. forested, grassland, commercial or residencial development, water sources)

Proximity to Public Land

What is the distance (mi.) from the project area to forested public lands (e.g., national or state forests, national or state parks, conservation areas, wildlife management areas)?

PHASE 1 SUMMER HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area

Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area
A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description
Sample Site No.(s): _____

Water Resources at Sample Site				
Stream Type (# and length)	Ephemeral	Intermittent	Perennial	Describe existing condition of water sources:
Pools/Ponds (# and size)		Open and accessible to bats?		
Wetlands (approx. ac.)	Permanent	Seasonal		

Forest Resources at Sample Site				
Closure/Density	Canopy (> 50')	Midstory (20-50')	Understory (<20')	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81=100%
Dominant Species of Mature Trees				
% Trees w/ Exfoliating Bark				
Size Composition of Live Trees (%)	Small (3-8 in)	Med (9-15 in)	Large (>15 in)	
No. of Suitable Snags				

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? _____

Additional Comments:

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources

PHASE 2 or 3 MIST-NETTING

Sample Data Sheets for Indiana Bat Surveys

Site No.				Project/Firm:							Date:
Location:											
County:				State:	Quad:						Quadrant:
Lat/Long (DMS):	N			W		Zone:					Surveyors:

#	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Mass (g)	Net/ Ht	Guano/ Hair	Wing Score	Band # Type
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											

Moon Phase:		%
	Rise	Set
Moon:		
Sun:		

Time	Temp	Sky	Wind	# Bats
Avg				

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Smoke or fog
5	Drizzle or light rain
6	Thunderstorm

Beauford Wind Code	
0	Calm (0 mph)
1	Light wind (1-3 mph)
2	Light breeze (4-7 mph)
3	Gentle breeze (8-12 mph)
4	Moderate breeze (13-18 mph)

*Repro. Cond (Reproductive Condition): (P) pregnant; (L) lactating; (PL) post-lactating; (NR) non-reproductive, (TD) testes descended

Sample Data Sheets for Indiana Bat Surveys

Net Site Diagram	Dominant Vegetation
	1
	2
	3
	4
	5

Net Site(s) by Habitat				
Habitat	A	B	C	
River				
Stream				
Pond				
Road Rut				
Corridor				
Cave/mine				
Total				

No. of Poles X Net length				
A	=		X	
B	=		X	
C	=		X	
D	=		X	

Other Species:

Comments:

PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name):_____ **Date:**_____

UTM: Zone_____ **Easting** _____ **Northing**_____ ***OR***

LAT_____ **LONG**_____

Property Owner:_____ **Phone#**_____

State_____ **County**_____ **Site #**_____

Roost #_____ **Roost Name:**_____

Roost Tree Data

Species: _____ **Live** __ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm)_____ **Total Height (ft or m)**_____

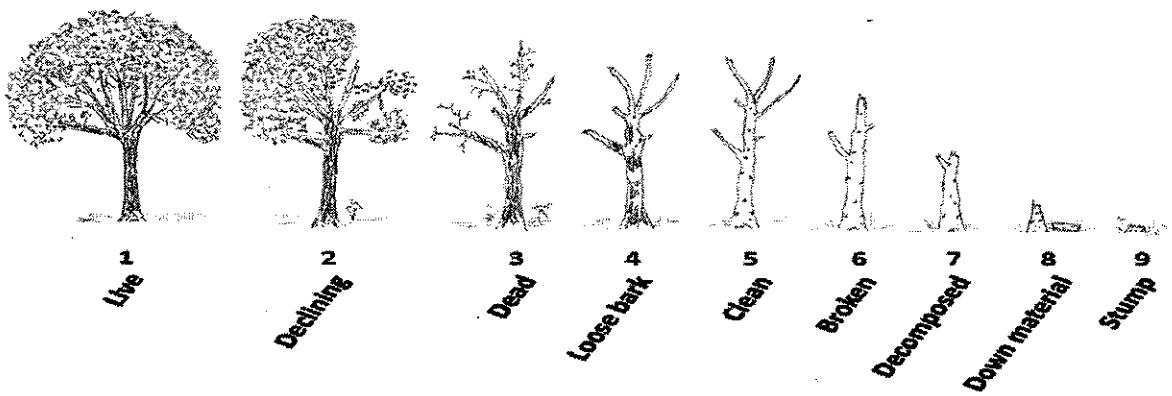
Height of roost area (if known)_____**Dist. from capture site**_____

Roost position aspect (deg)_____

Exfoliating bark on bole (%)_____ **Describe: sloughing** __ **platy**__ **tight**__

Cavities present? ____ **If so, describe:**_____

Roost Decay State: 1 2 3 4 5 6 7 8 9 Other



PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant __ Co-Dominant __ Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) _____

Approximate woodlot size (ac or ha)_____ Distance to non-forest (ft or m)_____

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)

_____

_____

_____

_____

_____

_____

Additional Comments_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: _____ **Surveyor(s) Full Name:**_____

State: _____ **County:** _____ **Project Name:** _____

Site Name/#: _____ **Roost Name/#** _____ **Bat #:**_____

Lat/Long or UTM of Roost: _____

Description of Roost/Habitat Feature Surveyed: _____

_____

Bat Species Known to be using this Roost/Feature (if not known, leave blank):

_____

Other Suspected Bat Species (explain): _____

Weather Conditions during Survey (temperature, precipitation, wind speed):

_____

Survey Start Time: _____ **Time of Sunset:** _____ **Survey End Time:** _____

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes

PHASE 4 EMERGENCE SURVEYS

Site Name/#: _____ **Roost Name/#:** _____

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:		

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

_____

_____

_____