

APPENDIX C

Site Information Datasheet

Investigator Name(s): CENTRAL OKLAHOMA GROTTO - Duane Jell Vecchio Date: Feb. 1, 2020

Phone /e-mail: 580-458-2909 ddvdude@gmail.com

State: <u>OK</u>	County: <u>Greer</u>	Site Name: <u>JESTER CAVE</u>	
Latitude: <u>35° 03' 30.6" N</u>	Longitude: <u>99° 41' 40.6" W</u>	Datum:	Nearest Pd+ Site: (name) <u>TEXAS PANHANDLE</u>

Site Ownership: (check one) <input checked="" type="checkbox"/> Private <input type="checkbox"/> Public <input type="checkbox"/> Military	Site Access: (check one) <input type="checkbox"/> N/A-landscape Open- <input type="checkbox"/> all year, <input type="checkbox"/> seasonal/restricted Gated- <input checked="" type="checkbox"/> all year, <input type="checkbox"/> seasonal, <input type="checkbox"/> breech	Site Classification: (check one) <input type="checkbox"/> N/A-landscape Cave- <input checked="" type="checkbox"/> undeveloped, <input type="checkbox"/> recreational, <input type="checkbox"/> show Mine- <input type="checkbox"/> active, <input type="checkbox"/> inactive, <input type="checkbox"/> show <input type="checkbox"/> Tunnel/culvert <input type="checkbox"/> Well/cistern <input type="checkbox"/> Bldg/bunker <input type="checkbox"/> Bat box <input type="checkbox"/> Bridge <input type="checkbox"/> Rock crevice/talus <input type="checkbox"/> Other (specify): _____
Site Use (at time of survey): (check one) <input checked="" type="checkbox"/> Hibernaculum <input type="checkbox"/> Day roost <input type="checkbox"/> Night roost <input type="checkbox"/> N/A-landscape		

Survey Type: (check one) Full Partial Trap (circle one): harp mist
 (check if applicable) No bats present No population info available

Population Summary Information:

Location ¹	Bat species	# live ²	# dead ²	# with fungus visible ²	Distribution of affected bats ³	Notes
Trap, Outside, Entrance, Inside <u>circle one per line</u>	4-letter code <small>Include "?" if unsure</small>				Solitary, Clustered	Ex: band #s observed, photo file IDs, uncertainty of species ID
T O E <u>1</u>	<u>MYVE</u>	<u>9</u>	<u>0</u>	<u>0</u>	S <u>C</u> N/A	
T O E <u>1</u>	<u>MYVE</u>	<u>6</u>	<u>0</u>	<u>0</u>	<u>S</u> C N/A	
T O E <u>1</u>	<u>PESU</u>	<u>8</u>	<u>0</u>	<u>0</u>	<u>S</u> C N/A	
T O E <u>1</u>	<u>PESU</u>	<u>2</u>	<u>0</u>	<u>0</u>	S <u>C</u> N/A	
T O E I					S C N/A	
T O E I					S C N/A	
T O E I					S C N/A	
T O E I					S C N/A	
T O E I					S C N/A	
T O E I					S C N/A	

¹Separate popn information by location for each species, **Entrance:** area impacted by daylight (twilight zone), **Inside:** beyond twilight zone
²Indicate if number is an estimate count; ³Cluster: ≥2 bats in direct contact, N/A: not applicable

Other WNS Clinical Signs Present at Site: (check all that apply) <input type="checkbox"/> UV positive bats <input type="checkbox"/> Moderate to severe wing damage (WDI ≥2) <input type="checkbox"/> Increased mortality/significant reduction in population count <input type="checkbox"/> Unusual roosting near entrance of hibernaculum <input type="checkbox"/> Increased day flight at entrance, # of bats flying in 5 min: _____	List species with each clinical sign: _____ _____ _____ _____
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Comments:
No Signs Present during Swabbing

Please attach a map of the hibernaculum with marked locations of sampled bats/environment within the site. Complete the Individual Specimen Collection Datasheet(s). For trap surveys, include copies of any additional datasheets.
EMAIL A SCANNED COPY OF ALL DATASHEETS AT TIME OF SHIPMENT

Vial # <small>See example label below.</small>	Sample Type <small>Whole Carcass Wing Tissue Bat Swab Soil Enviro Swab Guano</small>	Additional Sample from Same Bat <small>if applicable</small> Wing Tissue Bat Swab Guano	Species <small>4-letter code Include "?" if unsure</small>	On-site Location ² <small>Trap Outside Entrance Inside</small>	Status <small>Live Dead Euth</small>	Roost Pattern <small>Solitary Cluster³ Non-trap surveys only</small>	Visible Fungus <small>Muzzle Ear Wing Tail</small>	UV	Wing Damage Index <small>Reichard et al. 2009</small> Sex <small>Male Female</small>	Age Class <small>Adult Juvenile Unknown</small> Repro. Status ⁴	Body Wt. <small>(0.01 g)</small> Forearm Length <small>(0.1 mm)</small>	Band No. <small>if applicable</small> Recapture	Comments <small>-Agency's Ref. ID -Additional Vial # for bat-list sample type -Protocol deviations, photo file ID, etc. Enviro swabs: Specify as ceiling, wall, trap, etc.</small>
1101 20100	C T B S E G	T B G	PESU	T O E I	L D E	S C	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1102 20100	C T B S E G	T B G	PBSU	T O E I	L D E	S C	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1103 20100	C T B S E G	T B G	PBSU	T O E I	L D E	S C	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1104 20100	C T B S E G	T B G	PBSU	T O E I	L D E	S C	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1105 20100	C T B S E G	T B G	MYVE PBSU	T O E I	L D E	S C	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1106 20100	C T B S E G	T B G	PBSU	T O E I	L D E	S C	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1107 20100	C T B S E G	T B G	PBSU	T O E I	L D E	S C	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1108 20100	C T B S E G	T B G	PBSU	T O E I	L D E	S C	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1109 20100	C T B S E G	T B G	PBSU	T O E I	L D E	S C	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1110 20100	C T B S E G	T B G	PBSU	T O E I	L D E	S C	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	

Upper label (DO NOT remove)
USGS NWHC Batch ID

Lower label
Batch ID Vial #

Datasheet Label

Remove end tab after placement

*PG: pregnant, LA: lactating, PL: post-lactating, SC: scrotal, NR: non-reproductive

¹If no vial # label exists: create a unique ID Ex: W1010120AB001 (state, MMDDYY, collector, ###)

²Entrance: area impacted by daylight (twilight zone). Inside: beyond twilight zone;

³Cluster: ≥2 bats in direct contact

Version 2019-20 (1)

Vial # ¹ <small>See example label below.</small>	Sample Type <small>Whole Carcass Wing Tissue Bat Swab Soil Enviro Swab Guano</small>	Additional Sample from Same Bat <small>if applicable</small> Wing Tissue Bat Swab Guano	Species <small>4-letter code Include "sp" if unsure</small>	On-site Location ² <small>Trap Outside Entrance Inside</small>	Status <small>Live Dead Euth</small>	Roost Pattern <small>Solitary Cluster³ Non-trap surveys only</small>	Visible Fungus <small>Muzzle Ear Wing Tail</small>	UV	Wing Damage Index <small>Retchard et al. 2009 Sex Male Female</small>	Age Class <small>Adult Juvenile Unknown Repro. Status⁴</small>	Body Wt. <small>(0.02 g) Forearm Length <small>(0.1 mm)</small></small>	Band No. <small>if applicable</small> Recapture	Comments: <small>-Agency's Ref. ID -Additional Vial # for bat-list sample type -Protocol deviations, photo file ID, etc. Enviro swabs: Specify as ceiling, wall, trap, etc.</small>
1111 20100	CTBSEEG	CTBSEEG	PBSU	TOE1	DDE	S	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1112 20100	CTBSEEG		MYVE	TOE1	DDE	S	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1113 20100	CTBSEEG		MYVE	TOE1	DDE	S	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1114 20100	CTBSEEG		MYVE	TOE1	DDE	S	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1115 20100	CTBSEEG		MYVE	TOE1	DDE	S	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1116 20100	CTBSEEG		MYVE	TOE1	DDE	S	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1117 20100	CTBSEEG		MYVE	TOE1	DDE	S	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1118 20100	CTBSEEG		MYVE	TOE1	DDE	S	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1119 20100	CTBSEEG		MYVE	TOE1	DDE	S	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1120 20100	CTBSEEG		MYVE	TOE1	DDE	S	M E W T	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	

¹If no vial # label exists: create a unique ID Ex: W10101201B001 (state, MMDDYY, collector, ###)
²Entrance: area impacted by daylight (twilight zone). Inside: beyond twilight zone;
³Cluster: ≥2 bats in direct contact
⁴PG: pregnant, LA: lactating, PL: post-lactating, SC: scrotal, NR: non-reproductive

Lower label: Vial # Batch ID

Upper label (DO NOT remove): USGS NWHC Batch ID Vial # Label

Remove end tab after placement

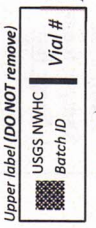

APPENDIX C- USGS NWHC Individual Specimen Collection Datasheet (pg. 3 of 3)

Site Name: JESTER CAVE Oklahoma

Date: 2/1/20

Vial # <i>See example label below.</i>	Sample Type Whole Carcass Wing Tissue Bat Swab Soil Enviro Swab Guano	Additional Sample from Same Bat <i>if applicable</i> Wing Tissue Bat Swab Guano	Species 4-letter code Include "?" if unsure	On-site Location ² Trap Outside Entrance Inside	Status Live Dead Euth	Roost Pattern Solitary Cluster ³ <i>Non-trap surveys only</i>	Visible Fungus Muzzle Ear Wing Tail	UV	Wing Damage Index Reichard et al. 2009 Sex Male Female	Age Class Adult Juvenile Unknown Repro. Status ⁴	Body Wt. (0.03 g) Forearm Length (0.1 mm)	Band No. <i>if applicable</i> Recapture	Comments -Agency's Ref. ID -Additional Vial # for bat-list sample type -Protocol deviations, photo file ID, etc. Enviro swabs: Specify as ceiling, wall, trap, etc.
1121 20100	CTBSEG	T B G	MYVE	TOEEI	LDE	S C	MEWT	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1122 20100	CTBSEG	T B G	MYVE	TOEEI	LDE	S C	MEWT	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1123 20100	CTBSEG	T B G	MYVE	TOEEI	LDE	S C	MEWT	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1124 20100	CTBSEG	T B G	MYVE	TOEEI	LDE	S C	MEWT	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
1125 20100	CTBSEG	T B G	MYVE	TOEEI	LDE	S C	MEWT	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
	CTBSEG	T B G		TOEEI	LDE	S C	MEWT	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
	CTBSEG	T B G		TOEEI	LDE	S C	MEWT	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	
	CTBSEG	T B G		TOEEI	LDE	S C	MEWT	+	0 1 2 3 M F	A J U PG LA PL SC NR		Y N	

¹If no vial # label exists: create a unique ID Ex: W1010120AB001 (state, MMDDYY, collector, ###)
²Entrance: area impacted by daylight (twilight zone). Inside: beyond twilight zone.
³Cluster: ≥2 bats in direct contact

Upper label (DO NOT remove)  Vial #
 Lower label  Vial #
 Remove end tab after placement

North American Bat Species Codes

Common Name	Genus sp.	Code	Life Strategy
Mexican big-eared bat	<i>Corynorhinus mexicana</i>	COME	hibernator
Rafinesque's big-eared	<i>Corynorhinus rafinesquii</i>	CORA	hibernator
Unknown COTO spp.	<i>C. townsendii</i> , subspecies unknown	COTO	hibernator
Townsend's big-eared	<i>C. townsendii townsendii</i>	COTOt	hibernator
Ozark big-eared bat	<i>C. townsendii ingens</i>	COTOi	hibernator
Western big-eared bat	<i>C. townsendii pallescens</i>	COTOp	hibernator
VA big-eared	<i>C. townsendii virginianus</i>	COTOv	hibernator
Big brown	<i>Eptesicus fuscus</i>	EPFU	hibernator
Southwestern myotis (Mexican long-eared)	<i>Myotis auriculus</i>	MYAR	hibernator
Southeastern myotis	<i>Myotis austroriparius</i>	MYAU	hibernator
California myotis	<i>Myotis californicus</i>	MYCA	hibernator
Western small-footed	<i>Myotis ciliolabrum</i>	MYCI	hibernator
Western long-eared myotis	<i>Myotis evotis</i>	MYEV	hibernator
Gray	<i>Myotis grisescens</i>	MYGR	hibernator
Keen's bat	<i>Myotis keenii</i>	MYKE	hibernator
Eastern small-footed	<i>Myotis leibii</i>	MYLE	hibernator
Little brown	<i>Myotis lucifugus</i>	MYLU	hibernator
Occult bat	<i>Myotis occultus</i>	MYOC	hibernator
Northern long-eared	<i>Myotis septentrionalis</i>	MYSE	hibernator
Indiana	<i>Myotis sodalis</i>	MYSO	hibernator
Fringed myotis	<i>Myotis thysanodes</i>	MYTH	hibernator
Cave myotis	<i>Myotis velifer</i>	MYVE	hibernator
Long-legged myotis	<i>Myotis volans</i>	MYVO	hibernator
Yuma myotis	<i>Myotis yumanesis</i>	MYYU	hibernator
Unknown Myotis	<i>Myotis sp.</i>	MYSP	hibernator
Tri-colored (E. pipistrelle)	<i>Perimyotis subflavus</i>	PESU	hibernator
Brazilian (Mexican) free-tailed	<i>Tadarida brasiliensis</i>	TABR	hibernator
Pallid	<i>Antrozous pallidus</i>	ANPA	non-hibernator
Mexican long-tongued	<i>Choeronycteris mexicana</i>	CHME	non-hibernator
Spotted	<i>Euderma maculatum</i>	EUMA	non-hibernator
Greater mastiff	<i>Eumops perotis</i>	EUPE	non-hibernator
Underwood's mastiff	<i>Eumops underwoodi</i>	EUUN	non-hibernator
Silver-haired	<i>Lasionycteris noctivagans</i>	LANO	non-hibernator
Western red	<i>Lasiurus blossevillii</i>	LABL	non-hibernator
Eastern red	<i>Lasiurus borealis</i>	LABO	non-hibernator
Hoary	<i>Lasiurus cinereus</i>	LACI	non-hibernator
Southern yellow	<i>Lasiurus ega</i>	LAEG	non-hibernator
Northern yellow	<i>Lasiurus intermedius</i>	LAIN	non-hibernator
Seminole	<i>Lasiurus seminolus</i>	LASE	non-hibernator
Western yellow	<i>Lasiurus xanthinus</i>	LAXA	non-hibernator
Greater long-nosed	<i>Leptonycteris nivalis</i>	LENI	non-hibernator
Lesser long-nosed	<i>Leptonycteris yerbabuenae</i>	LEYE	non-hibernator
California leaf-nosed	<i>Macrotus californicus</i>	MACA	non-hibernator
Pallas' mastiff	<i>Molossus molossus</i>	MOMO	non-hibernator
Ghost-faced	<i>Mormoops megalophylla</i>	MOME	non-hibernator
Evening	<i>Nycticeius humeralis</i>	NYHU	non-hibernator
Big free-tailed	<i>Nyctinomops macrotis</i>	NYMA	non-hibernator
Canyon bat	<i>Parastrellus hesperus</i>	PAHE	?
Unknown bat		Unk	

Wing Damage Index

Table 1. Wing conditions observed in *M. lucifugus* used for developing the wing damage index (WDI) for assessing the physical condition of flight membranes



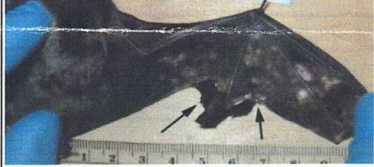
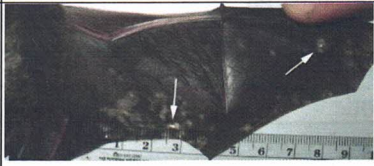

Symptom	Description	Example	
Spotting, splotching, depigmented membrane	Light spots appear on the darker wing and tail membranes. These spots are often more visible when the membrane is backlit	Figure 1	
Flaking and depigmented forearm	Dry skin appears along the forearm. Some spots appear lighter brown or pink where skin appears to have flaked off	Figure 2	
Necrotic tissue	Membranes may have visible scabs, open wounds, or infections. In more severe cases, large sections of membrane are sloughing from the wing	Figure 3	
Holes	Some very small pin-holes appear to be associated with ectoparasite wounds. Other holes are larger and often surrounded by depigmented or necrotic tissue. The appearance of the edges of holes may be likened to singed nylon	Figure 4	
Membrane loss	Wing areas are notably reduced along edges. Most commonly, the trailing edge of the plagiopatagium is receded in an arc from the leg to the fifth digit. Such damage may be severe, greatly reducing the overall surface area of the wings	Figure 5	

Table 2. Criteria used for the wing damage index (WDI) to assess bat flight membrane conditions. Each bat received the highest WDI for which it exhibits one or more of the indicated conditions for that level. The WDI score is recorded as a single composite score for both wings and the uropatagium, as a whole.

Wing condition	Condition				
	Spots / splotches	Discolored / flaking forearm	Necrotic tissue	Holes	Membrane loss
WDI=0 No damage/ minimal damage	≤ 5 small spots visible with trans-illumination	Not present	Not present	No holes, or possibly very small pin-sized holes	Fully intact
WDI=1 light damage	Present on < 50% of flight membranes	Present	Not present	No holes, or possibly very small pin-sized holes	Fully intact
WDI=2 moderate damage	Present on > 50% of flight membranes	Present (this condition alone scores WDI=1)	Few areas of necrosis	Small holes < 0.5 cm diameter –often associated with necrotic tissue	Necrosis on edges of patagium, but no loss of membrane area; Tears < 1cm
WDI=3 severe damage	Present on > 90% of flight membranes	Present (this condition alone scores WDI=1)	Abundant necrosis	Large holes > 0.5 cm diameter –often associated with necrotic tissue	Noticeable loss of membrane, often along trailing edge of plagiopatagium; Tears > 1 cm

Bibliography: Reichard JD, Kunz TH. 2009. White-nose syndrome inflicts lasting injuries to the wings of little brown myotis (*Myotis lucifugus*) *Acta Chiropterologica*, 11: 457–464.