

## **Appendix 3-F: Indiana Bat Supporting Information**

**Indiana Bat Supporting Information:  
Project Development Area**

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## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP1 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Abandoned buildings, disturbed areas and waste piles found throughout CVE site; undeveloped areas include surrounding wetlands and forest habitat.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of main CVE site; NYS Rt 22 along eastern boundary; active electric transmission corridor 500 ft to the north; linear features such as old roads and openings penetrate the larger site and connect sample plot to other more open areas; an abandoned utility easement traverses the plot east to west.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot ranges from approx 438 to 458 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great Swamp and Swamp River located within 100 ft from parcel's western boundary; interior site wetland approx. 100 ft to north.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Portions have exposure under semi-closed canopy.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 5
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 3

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP1 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	< 5 trees total; all surrounded by dense sub-canopy.
Live trees of any species over 26 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees over 26 dbh: 1 American Sycamore @ 28 dbh.
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: Green Ash and Eastern Cottonwood with suitable characteristics; other species present but absent essential characteristics; plot area dominated by Eastern Red Cedar in relatively dense stands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (X); 60-100% (X)		Less forest cover adjacent to wetland; greater forest cover on higher, sloping terrain; majority of plot and surrounding area characterized by a relatively dense overstory as well as understory.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Some trees with suitable characteristics do not have an overstory and minimal understory; some SRTs have a generally southern exposure.
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species in/near wetland include Green Ash and Eastern Cottonwood; Eastern Red Cedar on slopes and uplands; mixed deciduous species scattered throughout.

### Conclusions

Plot centroid location approx 250' northeast of access road and 100' west of utility pole on well-drained uplands; no live or dead Shagbark Hickory present; other live and dead tree species considered suitable/preferred present although in low numbers; plot and surrounding area characterized by a relatively closed canopy and dense understory; 1 tree => 26 dbh present but not a preferred species as Sycamore has smooth bark; portions of plot near wetland has a general southern exposure for part of the day; plot not considered representative of preferred roosting or foraging habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

Project/Site: CVE	Cnty: Dutchess	Date: 9/21/11	Sample Plot: CVE - MSP1 (1.04 acres)
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Investigator(s): A. Russo; D. Corelli

Suitable & Preferred (\*) Roost Trees

Present  
in/adjacent to  
sample plot?

Red maple	<input checked="" type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input checked="" type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input type="checkbox"/>		
Shagbark hickory*	<input type="checkbox"/>		
White ash	<input type="checkbox"/>		
Green ash	<input checked="" type="checkbox"/>		
White pine	<input type="checkbox"/>		
Eastern Cottonwood*	<input checked="" type="checkbox"/>		
White oak*	<input checked="" type="checkbox"/>		
Pin oak	<input type="checkbox"/>		
Northern red oak	<input type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site: CVE**

**Cnty: Dutchess**

**Date: 9/21/11**

**Sample Plot: CVE - MSP1 (1.04 acres)**

**Investigator(s): A. Russo; D. Corelli**

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP5 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Abandoned buildings 200 ft away; disturbed areas and waste piles found throughout CVE site; undeveloped areas include surrounding wetlands and forest habitat and transmission corridor.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of main CVE site; NYS Rt 22 along eastern boundary; active electric transmission corridor 800 ft to the north-northeast of plot; linear features such as old roads and openings penetrate the larger CVE site; Swamp River corridor located approx. 800 ft to the east of the plot.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot ranges from approx 432 to 445 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great Swamp and Swamp River located immediately east of the plot.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot adjacent to an abandoned parking/facility area that is covered in low herbaceous grasses and weeds; portions of plot that are adjacent to this open area, the railroad tracks, and the DEC wetland to the north-northwest have a semi-open canopy with a closed sub-canopy.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1 Eastern Cottonwood @ 21 dbh
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 1 Green Ash @ 7 dbh
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP5 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees over 26 dbh: 1 forked Eastern Cottonwood with two 27 inch dbh trunks.
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: several large Eastern Cottonwoods in the range of 16 - 20 inches dbh.
Estimated percent of plot/surrounding area that is forested.	<5% (X); 10-20% (); 20-60% (X); 60-100% (X)		<5% in abandoned parking/facility area; 20-60% in forested portion of plot.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Open area a mix of grasses, weeds and low shrubs; forested portion predominantly Eastern Cottonwood with Gray Birch, White Ash, Green Ash and elm scattered throughout.

**Conclusions**

Plot centroid location approx. 800-900' from transmission easement on flat disturbed terrain and fill; plot adjacent to on-site DEC wetland and the Great Swap/Swamp River; no live or dead Shagbark Hickory present; other live and dead tree species considered suitable/preferred present although in low numbers; plot and surrounding area characterized by a relatively open to semi-open canopy and dense understory; 1 tree => 26 dbh present (Eastern Cottonwood); although plot has some suitable characteristics, they are few and limited in number; plot not considered representative of preferred roosting habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple

Post oak

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE

**Cnty:** Dutchess

**Date:** 9/21/11

**Sample Plot:** CVE - MSP5 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Silver maple*	<input type="checkbox"/>	American elm*	<input checked="" type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input checked="" type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input type="checkbox"/>		
Shagbark hickory*	<input type="checkbox"/>		
White ash	<input checked="" type="checkbox"/>		
Green ash	<input checked="" type="checkbox"/>		
White pine	<input type="checkbox"/>		
Eastern Cottonwood*	<input checked="" type="checkbox"/>		
White oak*	<input type="checkbox"/>		
Pin oak	<input type="checkbox"/>		
Northern red oak	<input type="checkbox"/>		

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP4 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Abandoned buildings 200-400 ft away; disturbed areas and waste piles found throughout CVE site; undeveloped areas include surrounding wetlands and forest habitat and transmission corridor.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of main CVE site; NYS Rt 22 along eastern boundary; active electric transmission corridor 500 ft to the north-northeast of plot; linear features such as old roads and openings penetrate the larger CVE site.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot ranges from approx 432 to 445 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great Swamp and Swamp River located within 100 ft from CVE parcel's western boundary; DEC wetland approx. 200 ft to the northwest of the sample plot; isolated interior site wetland 50-100 ft. east of the sample plot.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot adjacent to waste pile is open and unvegetated; plot areas adjacent to wetlands have a semi-open canopy.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 4 (all Green Ash)
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 3

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP4 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: Green Ash; other species present but absent preferred characteristics; plot area adjacent to DEC wetland dominated by Red Cedar and Tree of Heaven ( <i>Ailanthus altissima</i> ) in relatively dense stands in pockets of open canopy .
Estimated percent of plot/surrounding area that is forested.	<5% (X); 10-20% (); 20-60% (X); 60-100% (X)		<5% in waste pile; 20-60% in forested portion of plot.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Some trees with suitable characteristics do not have an overstory and minimal understory; some SRTs have a generally southern exposure.
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species in/near wetland include White Ash, Green Ash and Eastern Cottonwood; Eastern Red Cedar and Tree of Heaven on slopes and uplands; mixed deciduous species scattered throughout.

**Conclusions**

Plot centroid location approx. 500-600' from transmission easement on flat to moderately sloped disturbed terrain and fill; plot adjacent to two wetlands; no live or dead Shagbark Hickory present; other live and dead tree species considered suitable/preferred present although in low numbers; plot and surrounding area characterized by a relatively closed to semi-open canopy and dense understory; 0 trees => 26 dbh present; although plot has some suitable characteristics, they are few and limited in number; plot not considered representative of preferred roosting habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple	<input checked="" type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site:** CVE

**Cnty:** Dutchess

**Date:** 9/21/11

**Sample Plot:** CVE - MSP4 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input type="checkbox"/>		
Shagbark hickory*	<input type="checkbox"/>		
White ash	<input checked="" type="checkbox"/>		
Green ash	<input checked="" type="checkbox"/>		
White pine	<input type="checkbox"/>		
Eastern Cottonwood*	<input checked="" type="checkbox"/>		
White oak*	<input type="checkbox"/>		
Pin oak	<input type="checkbox"/>		
Northern red oak	<input type="checkbox"/>		

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP3 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Abandoned buildings, disturbed areas and waste piles found throughout CVE site; undeveloped areas include surrounding wetlands and forest habitat and transmission corridor.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of main CVE site; NYS Rt 22 along eastern boundary; active electric transmission corridor 100 ft to the north of plot; linear features such as old roads and openings penetrate the larger site.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot ranges from approx 432 to 445 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 100 ft from parcel's western boundary; interior site wetlands from 200 to 300 ft south and west of the plot.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Plot has a generally closed canopy.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 3
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 2

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP3 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: Green Ash, White Ash and Eastern Cottonwood with suitable characteristics; other species present but absent essential characteristics; plot area dominated by Eastern Red Cedar in relatively dense stands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (); 60-100% (X)		Less forest cover adjacent to transmission corridor; greater forest cover predominates in plot; majority of plot and surrounding area characterized by a relatively dense overstory as well as understory.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Some trees with suitable characteristics do not have an overstory and minimal understory; some SRTs have a generally southern exposure.
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species in/near wetland include White Ash, Green Ash and Eastern Cottonwood; Eastern Red Cedar on slopes and uplands; mixed deciduous species scattered throughout.

**Conclusions**

Plot centroid location approx. 100' from transmission easement on moderately-drained, flat to moderately-sloping uplands; no live or dead Shagbark Hickory; other live and dead tree species considered suitable/preferred present although in low numbers; plot and surrounding area characterized by a relatively closed canopy and dense understory; 0 trees => 26 dbh present; plot not considered representative of preferred roosting or foraging habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE

**Cnty:** Dutchess

**Date:** 9/21/11

**Sample Plot:** CVE - MSP3 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input type="checkbox"/>		
Shagbark hickory*	<input type="checkbox"/>		
White ash	<input checked="" type="checkbox"/>		
Green ash	<input checked="" type="checkbox"/>		
White pine	<input type="checkbox"/>		
Eastern Cottonwood*	<input checked="" type="checkbox"/>		
White oak*	<input type="checkbox"/>		
Pin oak	<input type="checkbox"/>		
Northern red oak	<input type="checkbox"/>		

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP2 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Abandoned buildings, disturbed areas and waste piles found throughout CVE site; undeveloped areas include surrounding wetlands and forest habitat.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of main CVE site; NYS Rt 22 along eastern boundary; active electric transmission corridor 150 ft to the north of plot; linear features such as old roads and openings penetrate the larger site.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot ranges from approx 440 to 466 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great Swamp and Swamp River located within 100 ft from parcel's western boundary; interior site wetland approx. 150 ft to south of plot.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Portions near wetland have exposure under semi-open canopy.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees >= 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees >= 9 dbh: 0
Lightning-struck (e.g., split) trees >= 9 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1 Green Ash @ 23 dbh near wetland.
Dead/dying/damaged trees of any species >= 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Potential den trees, broken limbs, large stumps/snags >= 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP2 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: Green Ash and Eastern Cottonwood with suitable characteristics; other species present but absent essential characteristics; plot area dominated by Eastern Red Cedar in relatively dense stands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (X); 60-100% (X)		Less forest cover adjacent to wetland; greater forest cover on higher, sloping terrain; majority of plot and surrounding area characterized by a relatively dense overstory as well as understory.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Some trees with suitable characteristics do not have an overstory and minimal understory; some SRTs have a generally southern exposure.
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species in/near wetland include Red Maple, Green Ash and Eastern Cottonwood; Eastern Red Cedar on slopes and uplands; mixed deciduous species scattered throughout.

### Conclusions

Plot centroid location approx 150' southwest of transmission easement on well-drained sloping uplands; no live or dead Shagbark Hickory present; other live and dead tree species considered suitable/preferred present although in low numbers; plot and surrounding area characterized by a relatively closed canopy and dense understory; 0 trees => 26 dbh present; portions of plot near wetland have a general southern exposure for part of the day; plot not considered representative of preferred roosting habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

Suitable & Preferred (*) Roost Trees	Present in/adjacent to sample plot?		
Red maple	<input checked="" type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site:** CVE

**Cnty:** Dutchess

**Date:** 9/21/11

**Sample Plot:** CVE - MSP2 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Sugar maple*	<input checked="" type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input checked="" type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input type="checkbox"/>		
Shagbark hickory*	<input type="checkbox"/>		
White ash	<input checked="" type="checkbox"/>		
Green ash	<input checked="" type="checkbox"/>		
White pine	<input type="checkbox"/>		
Eastern Cottonwood*	<input checked="" type="checkbox"/>		
White oak*	<input type="checkbox"/>		
Pin oak	<input type="checkbox"/>		
Northern red oak	<input type="checkbox"/>		

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP6 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Abandoned buildings 150-200 ft away; disturbed areas and waste piles found throughout CVE site; undeveloped areas include surrounding wetlands and forest habitat and transmission corridor.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of main CVE site; NYS Rt 22 along eastern boundary; active electric transmission corridor approx. 1,400 ft to the north-northeast of plot; linear features such as old roads and openings penetrate the larger CVE site; Swamp River corridor located approx. 1,000 ft to the east of the plot.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot ranges from approx 432 to 445 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great Swamp and Swamp River located immediately east of the plot.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot adjacent to abandoned buildings and overgrown facility areas that are covered in low herbaceous grasses and weeds; portions of plot are adjacent to/within this open area; railroad track and linear wetlands form the western boundary of the plot; plot has an open to semi-open canopy and sub-canopy.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 2 (1 White Birch @ 14 dbh; 1 Eastern Cottonwood)
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 4

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE      **Cnty:** Dutchess      **Date:** 9/21/11      **Sample Plot:** CVE - MSP6 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: Eastern Cottonwoods, Green Ash, Gray Birch, Eastern Red Cedar
Estimated percent of plot/surrounding area that is forested.	<5% (X); 10-20% (); 20-60% (X); 60-100% ()		<5% in abandoned parking/facility area; 20-60% in forested portion of plot.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Open area a mix of grasses, weeds and low shrubs; forested portion predominantly Eastern Cottonwood, Green Ash and Red Cedar

**Conclusions**

Plot centroid location approx. 1,400' from transmission easement on flat disturbed terrain and fill; plot adjacent to on-site wetland and the Great Swamp/Swamp River; no live or dead Shagbark Hickory present; other live and dead tree species considered suitable/preferred present although in low numbers; plot and surrounding area characterized by a relatively open to semi-open canopy and dense understory; 0 trees => 26 dbh present; although plot has some suitable characteristics, they are few and limited in number; plot not considered representative of preferred roosting habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

Suitable & Preferred (*) Roost Trees	Present in/adjacent to sample plot?		
Red maple	<input checked="" type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site:** CVE

**Cnty:** Dutchess

**Date:** 9/21/11

**Sample Plot:** CVE - MSP6 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input checked="" type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input type="checkbox"/>		
Shagbark hickory*	<input type="checkbox"/>		
White ash	<input type="checkbox"/>		
Green ash	<input checked="" type="checkbox"/>		
White pine	<input type="checkbox"/>		
Eastern Cottonwood*	<input checked="" type="checkbox"/>		
White oak*	<input type="checkbox"/>		
Pin oak	<input type="checkbox"/>		
Northern red oak	<input type="checkbox"/>		

**Indiana Bat Supporting Information:  
Former Rasco Parcel**

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**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP1 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings at north end; site predominantly undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor 0.3 miles to the north; linear features or openings do not penetrate the plot or connect it to other more open areas.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 100 ft from parcel's western boundary.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Closed canopy predominates sample plot.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥/ 9 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees ≥/ 9 dbh: 8 (This sample plot recorded the most number of Shagbark Hickory for the Rasco parcel.)
Lightning-struck (e.g., split) trees ≥/ 9 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1 @ 18 dbh
Dead/dying/damaged trees of any species ≥/ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Potential den trees, broken limbs, large stumps/snags ≥/ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1 @ 14 dbh
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	< 5 trees total; all surrounded by dense sub-canopy.
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP1 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: Shagbark Hickory with suitable characteristics; other species present but absent essential characteristics; plot area dominated by Eastern Red Cedar in relatively dense stands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (); 60-100% (X)		Majority of plot and surrounding area characterized by a relatively dense overstory as well as understory.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shagbark Hickory within relatively closed canopy and dense understory.
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot and surrounding area characterized by a relatively dense overstory as well as understory; SRTs do not have a generally southern exposure.
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species is Eastern Red Cedar; mixed deciduous species scattered throughout.

**Conclusions**

Plot centroid location 250' west of concrete monument along NYS Rt. 22 on well-drained uplands; 8 live Shagbark Hickory of preferred dbh present as well as other live tree species considered suitable/preferred although in low numbers; plot and surrounding area characterized by a relatively closed canopy and dense understory; no trees => 26 dbh present; plot and surrounding area lacks general southern exposure and does not have sufficient solar exposure; plot not considered representative of preferred summer roosting or foraging habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

Suitable & Preferred (*) Roost Trees	Present in/adjacent to sample plot?		
Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input checked="" type="checkbox"/>
Yellow birch	<input checked="" type="checkbox"/>		
Gray birch	<input type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site: CVE - RASCO**

**Cnty: Dutchess**

**Date: 9/19/11**

**Sample Plot: CVE - RP1 (1.04 acres)**

**Investigator(s): A. Russo; D. Corelli**

Bitternut hickory	<input type="checkbox"/>
Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input checked="" type="checkbox"/>
White ash	<input checked="" type="checkbox"/>
Green ash	<input type="checkbox"/>
White pine	<input checked="" type="checkbox"/>
Eastern Cottonwood*	<input type="checkbox"/>
White oak*	<input type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input checked="" type="checkbox"/>

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP10 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings at north end; surrounding fill piles; site predominantly undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor 0.3 miles to the north; linear features do not penetrate the plot; portion of plot extends to an open fill area.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great Swamp and Swamp River located within 100 ft from parcel's western boundary; site contains interior wetlands along the southwest side; portion of plot in an isolated wetlands pocket surrounded by steeply sloping forested terrain.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Semi-open canopy predominates in wetland which comprises approx. 25% of plot.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 7
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Less than 5 trees total.

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP10 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: 1 Gray Birch
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (X); 20-60% (); 60-100% (X)		Plot in wetland area 10% to 20%; plot in forested upland area from 60% to 100%.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant tree species is Eastern Red Cedar with scattered Eastern Cottonwood, Green Ash, White Ash and Red Oak.

**Conclusions**

Plot centroid location approx. 260' west of utility pole along NYS Rt 22 on sloping terrain; portion (approx. 25%) of plot in wetlands; no live or dead Shagbark Hickory present; other tree species considered suitable/preferred occur although in low numbers; 1 Gray Birch present with preferred characteristics; plot and surrounding area has some semi-open canopy with areas of dense understory; no trees => 26 dbh present; plot has areas with a general southern exposure for part of the day; although plot has some suitable characteristics, they are few and limited in number; plot not considered representative of preferred roosting or foraging habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

Suitable & Preferred (*) Roost Trees	Present in/adjacent to sample plot?		
Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site: CVE - RASCO**

**Cnty: Dutchess**

**Date: 9/19/11**

**Sample Plot: CVE - RP10 (1.04 acres)**

**Investigator(s): A. Russo; D. Corelli**

Gray birch	<input checked="" type="checkbox"/>
Bitternut hickory	<input type="checkbox"/>
Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input type="checkbox"/>
White ash	<input checked="" type="checkbox"/>
Green ash	<input checked="" type="checkbox"/>
White pine	<input type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input checked="" type="checkbox"/>

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP9 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings at north end; site undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor approx. 0.6 miles to the north; linear features or openings do not penetrate the plot or connect it to other more open areas.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 100 ft from parcel's western boundary; site contains interior wetlands along the west side.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Relatively closed to semi-closed canopy predominates.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

<b>Project/Site:</b> CVE - RASCO	<b>Cnty:</b> Dutchess	<b>Date:</b> 9/19/11	<b>Sample Plot:</b> CVE - RP9 (1.04 acres)
<b>Investigator(s):</b> A. Russo; D. Corelli			
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Two trees with essential characteristics present; plot area dominated by Red Cedar in relatively dense stands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (); 60-100% x()		Plot and immediately surrounding area characterized by a closed canopy and closed to semi-closed sub-canopy.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	As in other plots, dominant species is Eastern Red Cedar; mixed deciduous species scattered throughout.
<b>Conclusions</b>			
Plot centroid location approx. 250' east of Metro North tracks along gently sloping terrain; no live or dead Shagbark Hickory present; live and dead/dying tree species considered suitable/preferred occur although in low numbers; plot and surrounding area characterized by a semi-closed to closed canopy; no trees => 26 dbh present; plot does not have general southern exposure; approx. 2 trees with suitable characteristics present; plot not considered representative of preferred roosting or foraging habitat overall.			

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

Suitable & Preferred (*) Roost Trees	Present in/adjacent to sample plot?		Present in/adjacent to sample plot?
Red maple	<input checked="" type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input checked="" type="checkbox"/>
Sugar maple*	<input checked="" type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site: CVE - RASCO**

**Cnty: Dutchess**

**Date: 9/19/11**

**Sample Plot: CVE - RP9 (1.04 acres)**

**Investigator(s): A. Russo; D. Corelli**

Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input type="checkbox"/>
White ash	<input checked="" type="checkbox"/>
Green ash	<input checked="" type="checkbox"/>
White pine	<input type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input checked="" type="checkbox"/>

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP8 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings at north end; site undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor approx. 0.6 miles to the north; linear features or openings do not penetrate the plot or connect it to other more open areas.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 100 ft from parcel's western boundary; site contains interior wetlands along the west side.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Relatively closed canopy predominates.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 6
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 3
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees over 26 dbh: 1 very large White Oak with multiple forked-trunk near base.

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

<b>Project/Site:</b> CVE - RASCO	<b>Cnty:</b> Dutchess	<b>Date:</b> 9/19/11	<b>Sample Plot:</b> CVE - RP8 (1.04 acres)
<b>Investigator(s):</b> A. Russo; D. Corelli			
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Some with essential characteristics present; plot area dominated by Red Cedar in relatively dense stands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (); 60-100% (X)		Plot and immediately surrounding area characterized by a closed canopy and closed to semi-closed sub-canopy.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	As in other plots, dominant species is Red Cedar; mixed deciduous species scattered throughout.
<b>Conclusions</b>			
Plot centroid location approx. 325' west of RP7 along gently sloping terrain to Metro North tracks; no live/ dead Shagbark Hickory of preferred dbh present; other live and dead/dying tree species considered suitable/preferred occur although in low numbers; plot and surrounding area characterized by a closed canopy; 1 tree => 26 dbh present; plot does not have general southern exposure; approx. 10 trees with suitable characteristics present; although some trees with suitable characteristics are present in the plot, they are few and limited in nature; plot not considered representative of preferred roosting or foraging habitat overall.			

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

Suitable & Preferred (*) Roost Trees	Present in/adjacent to sample plot?		Present in/adjacent to sample plot?
Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input checked="" type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site: CVE - RASCO**

**Cnty: Dutchess**

**Date: 9/19/11**

**Sample Plot: CVE - RP8 (1.04 acres)**

**Investigator(s): A. Russo; D. Corelli**

Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input type="checkbox"/>
White ash	<input checked="" type="checkbox"/>
Green ash	<input type="checkbox"/>
White pine	<input type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input checked="" type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input checked="" type="checkbox"/>

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP7 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings at north end; site undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor approx. 0.6 miles to the north; linear features or openings do not penetrate the plot or connect it to other more open areas.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 100 ft from parcel's western boundary; site contains interior wetlands along western edge.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Portions of plot with a semi-open canopy.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees over 26 dbh: 1 (1 Red Oak @ 26 dbh).

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP7 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (X); 60-100% (X)		Plot and surrounding area characterized by a closed canopy; spots of semi-open canopy.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot and surrounding area characterized by a relatively semi-open canopy; limited parts of SRTs have a generally southern exposure.
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species is Red Cedar; mixed deciduous species scattered throughout.

**Conclusions**

Plot centroid location 250' west of concrete monument along NYS Rt. 22 on well-drained sloping uplands; live/dead Shagbark Hickory absent; other live tree species considered suitable/preferred occur although in low numbers; plot and immediately surrounding area characterized by a relatively closed canopy with pockets that are semi-open; 1 tree => 26 dbh present; portions of plot have a general southern exposure; plot has few characteristics of preferred habitat (large trees, dead with exfoliating bark); plot not considered representative of preferred roosting or foraging habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

Suitable & Preferred (*) Roost Trees	Present in/adjacent to sample plot?		
Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site: CVE - RASCO**

**Cnty: Dutchess**

**Date: 9/19/11**

**Sample Plot: CVE - RP7 (1.04 acres)**

**Investigator(s): A. Russo; D. Corelli**

Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input type="checkbox"/>
White ash	<input checked="" type="checkbox"/>
Green ash	<input type="checkbox"/>
White pine	<input type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input checked="" type="checkbox"/>

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP6 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings at north end; site undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor 0.5 miles to the north; linear features do not penetrate the plot; plot has a relatively open canopy with exposure to the tracks and Great Swamp.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 100 ft from parcel's western boundary; site contains interior wetlands along the west side; plot located predominantly in wetlands.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Semi-open canopy predominates.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥/ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥/ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥/ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥/ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Potential den trees, broken limbs, large stumps/snags ≥/ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 4
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees over 26 dbh: 1 live Eastern Cottonwood at approx. 26 dbh.

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP6 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Preferred/suitable species present but without essential characteristics; Red Maple dominants in wetland portion; Eastern Red Cedar dominates along slope and uplands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (X); 60-100% ()		Plot and surrounding area characterized by a semi-open to open canopy and sub-canopy.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species in uplands is Eastern Red Cedar; mixed deciduous facultative wetland species (Red Maple, Green Ash, Eastern Cottonwood) scattered throughout wetland.

**Conclusions**

Plot centroid location approx. 250' east of railroad embankment in mixed emergent/forested wetland ; no live/dead Shagbark Hickory present; other live tree species considered suitable/preferred occur although in low numbers; plot and surrounding area characterized by a relatively semi-open canopy and areas of dense understory; 1 tree => 26 dbh present; plot has areas with a general southern exposure for part of the day; plot not considered representative of preferred roosting habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple	<input checked="" type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input checked="" type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input checked="" type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site: CVE - RASCO**

**Cnty: Dutchess**

**Date: 9/19/11**

**Sample Plot: CVE - RP6 (1.04 acres)**

**Investigator(s): A. Russo; D. Corelli**

Bitternut hickory	<input type="checkbox"/>
Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input type="checkbox"/>
White ash	<input checked="" type="checkbox"/>
Green ash	<input checked="" type="checkbox"/>
White pine	<input type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input type="checkbox"/>

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP5 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings at north end; site undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor approx. 0.5 miles to the north; linear features or openings do not penetrate the plot or connect it to other more open areas.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 100 ft from parcel's western boundary; site contains interior wetlands along the west side.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Semi-closed canopy predominates sample plot.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees >= 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees >= 9 dbh: 0
Lightning-struck (e.g., split) trees >= 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species >= 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1 forked-trunk Gray Birch; each trunk approx. 16 dbh
Potential den trees, broken limbs, large stumps/snags >= 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

<b>Project/Site:</b> CVE - RASCO	<b>Cnty:</b> Dutchess	<b>Date:</b> 9/19/11	<b>Sample Plot:</b> CVE - RP5 (1.04 acres)
<b>Investigator(s):</b> A. Russo; D. Corelli			
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: 1 Gray Birch; other species present but absent essential characteristics; plot area dominated by Eastern Red Cedar in relatively dense stands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (X); 60-100% ()		Plot and immediately surrounding area characterized by a relatively semi-closed canopy and sub-canopy.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The 1 Gray Birch has no canopy but has surrounding understory within 2m.
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species is Eastern Red Cedar; mixed deciduous species scattered throughout.
<b>Conclusions</b>			
Plot centroid location approx. 325' west of RP4 along sloping terrain to wetlands; no live/dead Shagbark Hickory present; other live tree species considered suitable/preferred occur although in low numbers; plot and surrounding area characterized by a relatively semi-closed canopy ; no trees => 26 dbh present; portions of plot have a general southern exposure for part of the day; only 1 large tree with suitable characteristics present; plot not considered representative of preferred roosting or foraging habitat overall.			

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

Suitable & Preferred (*) Roost Trees	Present in/adjacent to sample plot?		
Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input checked="" type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site: CVE - RASCO**

**Cnty: Dutchess**

**Date: 9/19/11**

**Sample Plot: CVE - RP5 (1.04 acres)**

**Investigator(s): A. Russo; D. Corelli**

Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input type="checkbox"/>
White ash	<input checked="" type="checkbox"/>
Green ash	<input type="checkbox"/>
White pine	<input type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input checked="" type="checkbox"/>

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP4 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings at north end; site undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor approx. 0.5 miles to the north; linear features or openings do not penetrate the plot or connect it to other more open areas.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 100 ft from parcel's western boundary; site contains interior wetlands along the west side.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Semi-closed canopy predominates sample plot.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 3
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 3
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	< 10 trees total; all surrounded by dense sub-canopy.
Live trees of any species over 26 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees over 26 dbh: 3 (1 Red Oak @ 32 dbh with some dead limbs; 1 Red Oak @ 26 dbh; 1 White Pine @ 32 dbh)

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

<b>Project/Site:</b> CVE - RASCO	<b>Cnty:</b> Dutchess	<b>Date:</b> 9/19/11	<b>Sample Plot:</b> CVE - RP4 (1.04 acres)
<b>Investigator(s):</b> A. Russo; D. Corelli			
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1 Red Oak with desirable traits; other species present but absent essential characteristics; plot area dominated by Red Cedar in relatively dense stands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (X); 60-100% ()		Plot and surrounding area characterized by a semi-closed canopy; sub-canopy dense.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot and surrounding area characterized by a relatively semi-closed canopy; upper parts of SRTs have some southern exposure for part of the day.
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species is Eastern Red Cedar; mixed deciduous species scattered throughout.

**Conclusions**  
 Plot centroid location 280' west of utility pole along NYS Rt. 22 on well-drained uplands; live/dead Shagbark Hickory absent; other live tree species considered suitable/preferred occur although in low numbers; plot and immediately surrounding area characterized by a relatively semi-closed canopy and understory; 3 live trees => 26 dbh present; portions of plot have a general southern exposure; plot has characteristics of preferred habitat (large trees, some dead with exfoliating bark) although few in total number; plot has some suitable characteristics but is surrounded by denser forest with closed canopy; plot not considered representative of preferred roosting or foraging habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

Suitable & Preferred (*) Roost Trees	Present in/adjacent to sample plot?		
Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>
Sugar maple*	<input checked="" type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input checked="" type="checkbox"/>		
Gray birch	<input checked="" type="checkbox"/>		

# Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

Project/Site: CVE - RASCO

Cnty: Dutchess

Date: 9/19/11

Sample Plot: CVE - RP4 (1.04 acres)

Investigator(s): A. Russo; D. Corelli

Bitternut hickory	<input type="checkbox"/>
Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input checked="" type="checkbox"/>
White ash	<input checked="" type="checkbox"/>
Green ash	<input type="checkbox"/>
White pine	<input checked="" type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input checked="" type="checkbox"/>

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP3 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings and fill piles at north end; site predominantly undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor 0.3 miles to the north; linear features do not penetrate the plot; plot has a relatively open canopy with solar exposure that opens the railroad tracks and Great Swamp.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 100 ft from parcel's western boundary; site contains interior wetlands along the west side.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Semi-open canopy predominates the sample plot.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥/ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥/ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥/ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥/ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Potential den trees, broken limbs, large stumps/snags ≥/ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 5
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0; plot does have a number of live Eastern Cottonwood from 16 - 20 inches dbh.

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

<b>Project/Site:</b> CVE - RASCO	<b>Cnty:</b> Dutchess	<b>Date:</b> 9/19/11	<b>Sample Plot:</b> CVE - RP3 (1.04 acres)
<b>Investigator(s):</b> A. Russo; D. Corelli			
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preferred/suitable species present but without essential characteristics; Eastern Red Cedar occur in relatively dense stands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (X); 20-60% (); 60-100% ()		Plot and surrounding area characterized by a semi-open to open canopy and sub-canopy.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species is Eastern Red Cedar; mixed deciduous facultative wetland species scattered throughout.
<b>Conclusions</b>			
Plot centroid location approx. 250' east of railroad embankment in mixed emergent/forested wetland ; no live/dead Shagbark Hickory present; other live tree species considered suitable/preferred occur although in low numbers; plot and surrounding area characterized by a relatively semi-open canopy with areas of closed understory; no trees => 26 dbh present; plot has areas with a general southern exposure for part of the day; plot has some suitable characteristics but few and limited in nature; plot not considered representative of preferred roosting habitat overall.			

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple	<input checked="" type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input checked="" type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input checked="" type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site: CVE - RASCO**

**Cnty: Dutchess**

**Date: 9/19/11**

**Sample Plot: CVE - RP3 (1.04 acres)**

**Investigator(s): A. Russo; D. Corelli**

Bitternut hickory	<input type="checkbox"/>
Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input type="checkbox"/>
White ash	<input checked="" type="checkbox"/>
Green ash	<input checked="" type="checkbox"/>
White pine	<input type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input type="checkbox"/>

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP2 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings and fill piles at north end; Rasco site predominantly undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor 0.3 miles to the north; linear features or openings do not penetrate the plot or connect it to other more open areas.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 100 ft from parcel's western boundary; site contains interior wetlands along the west side.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Closed canopy predominates sample plot.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees >= 9 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees >= 9 dbh: 1
Lightning-struck (e.g., split) trees >= 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species >= 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Potential den trees, broken limbs, large stumps/snags >= 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1 @ 10 dbh
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	< 5 trees total; 1 tree a Shagbark Hickory at 5 dbh; all surrounded by dense sub-canopy.
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

<b>Project/Site:</b> CVE - RASCO	<b>Cnty:</b> Dutchess	<b>Date:</b> 9/19/11	<b>Sample Plot:</b> CVE - RP2 (1.04 acres)
<b>Investigator(s):</b> A. Russo; D. Corelli			
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: 2 Shagbark Hickory; other species present but absent essential characteristics; plot area dominated by Red Cedar in relatively dense stands.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60% (); 60-100% (X)		Plot and surrounding area characterized by a relatively dense overstory as well as understory.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot and surrounding area characterized by a relatively dense overstory as well as understory; SRTs do not have a generally southern exposure.
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species is Eastern Red Cedar; mixed deciduous species scattered throughout.
<b>Conclusions</b>			
Plot centroid location approx. 325' west of RP1 along sloping terrain to interior wetlands ; 1 live Shagbark Hickory of preferred dbh observed; other live tree species considered suitable/preferred occur although in low numbers; plot and surrounding area characterized by a relatively closed canopy and dense understory; no trees => 26 dbh present; plot and surrounding area lacks general southern exposure; plot not considered representative of preferred roosting or foraging habitat overall.			

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger(=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/19/11    **Sample Plot:** CVE - RP2 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input checked="" type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input checked="" type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input type="checkbox"/>		
Shagbark hickory*	<input checked="" type="checkbox"/>		
White ash	<input checked="" type="checkbox"/>		
Green ash	<input checked="" type="checkbox"/>		
White pine	<input type="checkbox"/>		
Eastern Cottonwood*	<input checked="" type="checkbox"/>		
White oak*	<input type="checkbox"/>		
Pin oak	<input type="checkbox"/>		
Northern red oak	<input checked="" type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

<b>Project/Site: CVE - RASCO</b>	<b>Cnty: Dutchess</b>	<b>Date: 9/19/11</b>	<b>Sample Plot: CVE - RP2 (1.04 acres)</b>
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**Investigator(s): A. Russo; D. Corelli**

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/21/11    **Sample Plot:** CVE - RP11 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abandoned buildings at north end; surrounding fill piles; site predominantly undeveloped.
Are hedge rows, linear features like roads, tracks or transmission easements present in the area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Metro North tracks along western boundary of Rasco parcel; electric transmission corridor 0.3 miles to the north; linear features do not penetrate the plot; portion of plot extends into an open and active fill area.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured 2 miles from site and a maternity colony potentially exists within 5 miles of the site.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx 416 to 500 ft amsl.
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Great swamp and Swamp River located within 250 ft from parcel's western boundary; site contains interior wetlands along the southwest side; plot adjacent to a small wetlands pocket comprising a portion of Plot RP10.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Semi-open canopy predominates.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥/≤ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥/≤ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥/≤ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥/≤ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1 Gray Birch @ 14 dbh
Potential den trees, broken limbs, large stumps/snags ≥/≤ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 4
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Less than 5 total..

## Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form

**Project/Site:** CVE - RASCO    **Cnty:** Dutchess    **Date:** 9/21/11    **Sample Plot:** CVE - RP11 (1.04 acres)

**Investigator(s):** A. Russo; D. Corelli

Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Estimated percent of plot/surrounding area that is forested.	<5% (X); 10-20% (); 20-60% (X); 60-100% ()		Fill area portion of plot not forested, contains scattered Locust trees; forested area from 20% - 60%.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the sample plot representative of habitat is the immediately surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant tree species is Eastern Red Cedar with scattered Eastern Cottonwood; open fill area and waste piles covered by <i>Artemisia vulgaris</i> (mugwort or common wormwood).

**Conclusions**

Plot centroid location approx. 200' south of abandoned block building; plot on raised terrain formed by surrounding fill piles; no live or dead Shagbark Hickory present; other tree species considered suitable/preferred occur although in low numbers; 1 Gray Birch present with preferred characteristics; approx. 50% of the plot extends into an open/active fill area with the remainder in forested cover with a semi-open canopy; no trees => 26 dbh present; plot has areas with a general southern exposure for part of the day; plot not considered representative of preferred roosting habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Roosting Habitat Suitability Assessment Form**

**Project/Site: CVE - RASCO**

**Cnty: Dutchess**

**Date: 9/21/11**

**Sample Plot: CVE - RP11 (1.04 acres)**

**Investigator(s): A. Russo; D. Corelli**

Gray birch	<input checked="" type="checkbox"/>
Bitternut hickory	<input type="checkbox"/>
Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input type="checkbox"/>
White ash	<input type="checkbox"/>
Green ash	<input type="checkbox"/>
White pine	<input type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input type="checkbox"/>

**Indiana Bat Supporting Information:  
Remote Laydown Site**

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## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/27/11    **Sample Plot:** MIB1 (approx. 16 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Barn/farmhouse complex around site entrance.
Hedge Rows & Linear Features Present in Landscape	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Railroad tracks and NYS Rt 22 along west boundary; Old Rt 22 along east boundary; Sherman Hill Road along southeast boundary; linear tree and shrub rows along NYS Rt 22 and bordering active agricultural and abandoned fields as well as riparian wetlands corridor.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured in the site vicinity and a maternity colony potentially exists within 5 miles of the site vicinity.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx. 360 ft. to 550ft. amsl
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Muncie site characterized by mowed areas around barn/farmhouse complex, active agricultural fields, abandoned/overgrown open fields, scrub/shrub lands, hedge/thicket and tree rows, and deciduous forest in the southwest corner; stream and emergent/shrub wetlands form south edge of sample plot. Plot MIB1 in/around barn/farmhouse complex.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot cleared and mowed in the vicinity of farmhouse; emergent/shrub wetland south of site driveway; stream corridor open to direct solar exposure.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Potential den trees, broken limbs, large stumps/snags ≥ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/27/11    **Sample Plot:** MIB1 (approx. 16 acres)

**Investigator(s):** A. Russo; D. Corelli

Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees over 26 dbh: 15 (large, specimen Sugar Maples @ 28, 29, 30, 32, 33, 35, 35, 42, 42, 45, 46, 49, & 52 dbh; 1 Black Locust @ 32 dbh; 1 Southern Catalpa @ 52 dbh); all 26+ dbh specimens in live condition around barn/farmhouse complex.
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: large diameter Sugar Maples with thick bark (flared vertical plates, semi-ridged, or with overlapping shingles); some trees with boles/crevices/dead limbs.
Estimated percent of plot/surrounding area that is forested.	<5% (X); 10-20% (); 20-60%(); 60-100%()		
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	High concentration of large, planted sugar maples around farmhouse; few SRTs in remainder of 16-acre sample plot.
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sugar Maples around farmhouse are live with broad canopies; no sub-canopy or understory within 2m.
Is the sample plot representative of potential summer roosting habitat for the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Having been planted decades ago around the farmhouse and along Old Rt 22, these large dbh Sugar Maples are unique to the developed portion of the sample plot; remainder of plot to the south of the barn/farmhouse is more characteristic of the undeveloped old field and stream/wetlands covertype found in the southern portion of the site.

### Conclusions

Unique features of plot MIB1 includes concentration of large diameter (26+ inch dbh) Sugar Maples some with desirable features such as cavities, crevices, and large diameter limbs with some exfoliation; Sugar Maples are in live state with broad canopies and no sub-canopy allowing solar exposure for the majority of the day; Sugar Maple area of plot is in proximity to open field and stream/wetlands habitat; sample plot has characteristics of suitable/preferred roosting as well as foraging habitat; sample plot is not unique however compared to the broader geography as numerous farm complexes are still in existence with similar characteristics in addition to the fact that Sugar Maples were widely planted in this area of Dutchess County for sugar harvesting, shade, ornamental and aesthetic appreciation.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple

Post oak

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown

**Cnty:** Dutchess

**Date:** 9/27/11

**Sample Plot:** MIB1 (approx. 16 acres)

**Investigator(s):** A. Russo; D. Corelli

Silver maple*	<input type="checkbox"/>	American elm*	<input checked="" type="checkbox"/>
Sugar maple*	<input checked="" type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input checked="" type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input type="checkbox"/>		
Shagbark hickory*	<input type="checkbox"/>		
White ash	<input type="checkbox"/>		
Green ash	<input checked="" type="checkbox"/>		
White pine	<input type="checkbox"/>		
Eastern Cottonwood*	<input checked="" type="checkbox"/>		
White oak*	<input type="checkbox"/>		
Pin oak	<input type="checkbox"/>		
Northern red oak	<input type="checkbox"/>		

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/28/11    **Sample Plot:** MIB5A (approx. 6.5 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Barn/farmhouse complex around site entrance; active and abandoned agricultural fields and pasture; low density residential along Sherman Hill Road; sample plot MIB5A located within an approximate 35-acre forested area in the southern portion of the Muncie site.
Hedge Rows & Linear Features Present in Landscape	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Railroad tracks and NYS Rt 22 along west boundary; Old Rt 22 and Sherman Hill Road along east/southeast boundary; linear tree and shrub rows along NYS Rt 22 and bordering active agricultural and abandoned fields as well as riparian wetlands corridor.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured in the site vicinity and a maternity colony potentially exists within 5 miles of the site vicinity.
≤ 900' AMSL **	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx. 360 ft. to 550ft. amsl
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Muncie site characterized by mowed areas around barn/farmhouse complex, active agricultural fields, abandoned/overgrown open fields, scrub/shrub lands, hedge/thicket and tree rows, and deciduous forest in the southwest corner; riparian wetlands corridor bisects the site east to west; riparian wetlands corridor forms northern boundary of sample plot MIB5A. Plot MIB5A is an approx. 1,400' x 200' sample corridor that is predominantly deciduous forest (American Beech, Sugar Maple, White Oak, Red Oak, Hickory spp., Black Cherry on higher elevations and slopes) with Red Cedar, shrub, thicket, overgrown field habitat on lower elevations and around perimeter of forested areas.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Closed to semi-closed canopy limits sunlight penetration.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥/ = 9 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees ≥/ = 9 dbh: 15

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/28/11    **Sample Plot:** MIB5A (approx. 6.5 acres)

**Investigator(s):** A. Russo; D. Corelli

Lighting-struck (e.g., split) trees >= 9 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1 large Sugar Maple
Dead/dying/damaged trees of any species >= 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 8 trees of various species
Potential den trees, broken limbs, large stumps/snags >= 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 2
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees over 26 dbh: 5 ( 3 Sugar Maples @ 28, 29, & 42 dbh; 1 Pignut Hickory @ 32 dbh; 1 Shagbark Hickory @ 33 dbh); all 26+ dbh specimens in live condition with full crowns.
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: large diameter Sugar Maples with thick bark (flared vertical plates, semi-ridged, or with overlapping shingles); some trees with boles/crevices/dead limbs; Pignut and Shagbark Hickory present in high number; although not on list below, specimens of Shellbark Hickory present.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60%(); 60-100%(X)		Sample plot and surrounding area forested with a closed to semi-closed canopy; higher elevations (450' - 550' amsl) and western facing slopes with generally open understory.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Highest concentration of suitable/preferred trees located in the south-central portion of this forested area on elevations above 500' amsl.
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample plot and surrounding area forested with a closed to semi-closed canopy; higher elevations (500'+ amsl) and western facing slopes with generally open understory; areas below 500' have a closed sub-canopy within 2m of larger trees.
Is the sample plot representative of potential summer roosting habitat for the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Linear sample plot representative of deciduous uplands prevalent in the surrounding area of the Muncie Site; similar areas found immediately to the east of NYS Rt 22 and the Metro North tracks as well as to the northeast of the site in the Nellie Hill area.

### Conclusions

Center line of linear sample plot/corridor (approx. 1,400' x 200') begins approx. 325 ft. east of NYS Rt 22 and proceeds in a general northerly direction from the southern Muncie site property limit to the riparian stream/wetlands corridor; 15 live

Shagbark Hickories of preferred dbh present as well as other live tree species considered suitable/preferred although in lower

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/28/11    **Sample Plot:** MIB5A (approx. 6.5 acres)

**Investigator(s):** A. Russo; D. Corelli

Snag oak hickory or preferred not present as well as other live tree species considered suitable/preferred although in lower numbers; plot and surrounding area characterized by a relatively closed canopy and dense understory; 5 trees => 26 dbh present all in live condition; 1 potentially lightning-struck tree; 10 trees either dead/stressed with exfoliating bark, crevices/cavities observed; plot and surrounding area predominantly forested; suitable/preferred trees lack general southern exposure and do not have sufficient solar exposure; plot not considered representative of preferred summer roosting or foraging habitat overall.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (>= 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

Suitable & Preferred (*) Roost Trees	Present in/adjacent to sample plot?		
Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input checked="" type="checkbox"/>
Sugar maple*	<input checked="" type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input checked="" type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input checked="" type="checkbox"/>		
Shagbark hickory*	<input checked="" type="checkbox"/>		
White ash	<input type="checkbox"/>		
Green ash	<input type="checkbox"/>		
White pine	<input type="checkbox"/>		

Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

Project/Site: CVE Laydown

Cnty: Dutchess

Date:9/28/11

Sample Plot: MIB5A (approx. 6.5 acres)

Investigator(s): A. Russo; D. Corelli

Eastern Cottonwood\*



White oak\*



Pin oak



Northern red oak



**Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form**

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/27/11    **Sample Plot:** MIB4 (approx. 9 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Active agricultural fields (corn) to the east of the plot; open/overgrown field and forest to south/southwest; riparian wetlands corridor to the south/southwest; single-family homes to the west along Ontiontown Road.
Hedge Rows & Linear Features Present in Landscape	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Railroad tracks and NYS Rt 22 along west boundary; Old Rt 22 along east boundary; Sherman Hill Road along southeast boundary; linear tree/shrub/thicket rows along NYS Rt 22 and bordering active agricultural and abandoned fields as well as riparian wetlands corridor; NYS Rt 22 and agricultural fields planted in corn form the eastern edge of sample plot MIB4; Plot MIB4 is a narrow row of trees/shrubs/thicket approximately 3,600 ft. long by 100 ft. wide.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured in the site vicinity and a maternity colony potentially exists within 5 miles of the site vicinity.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx. 360 ft. to 550ft. amsl
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Muncie site characterized by mowed areas around barn/farmhouse complex, active agricultural fields, abandoned/overgrown open fields, scrub/shrub lands, hedge/thicket and tree rows, and deciduous forest in the southwest corner; riparian and emergent/shrub wetlands form north-northeast boundary of sample plot. Plot MIB4 is a linear tree/shrub/thicket corridor between NYS Rt 22 and planted corn field; riparian wetlands to the south.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Narrow, linear nature of plot allows for direct sunlight penetration along edges.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees >= 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees >= 9 dbh: 0
Lightning-struck (e.g., split) trees >= 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/27/11    **Sample Plot:** MIB4 (approx. 9 acres)

**Investigator(s):** A. Russo; D. Corelli

Dead/dying/damaged trees of any species $\geq$ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 8
Potential den trees, broken limbs, large stumps/snags $\geq$ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 9
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Estimated percent of plot/surrounding area that is forested.	<5% (X); 10-20% (X); 20-60%(); 60-100%(X)		<5% adjoining field and riparian corridor; 10-20% along edges to field/riparian corridor; 60-100% with shrub/thicket/tree row.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Trees with suitable/preferred characteristics have canopies and/or sub-canopies with 2m; many trees vine covered.
Is the sample plot representative of potential summer roosting habitat for the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Typical of linear tree/shrub/thicket rows that form edges of corn fields as well as vegetated rows that define perimeter of abandoned overgrown fields in southwest portion of site.

### Conclusions

Plot MIB4 is typical of other narrow, linear tree/shrub/thicket rows on site and along NYS Rt 22; no live/dead shagbark hickory present; few trees with dead/damaged/exfoliating bark features; no large 26 dbh trees; forest cover/canopy properties vary from open, to semi-open to closed; although some trees with suitable characteristics are present in the plot, they are few and limited in nature; plot not considered representative of preferred roosting or foraging habitat.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger ( $\geq$  9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple

Post oak

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown

**Cnty:** Dutchess

**Date:** 9/27/11

**Sample Plot:** MIB4 (approx. 9 acres)

**Investigator(s):** A. Russo; D. Corelli

Silver maple*	<input type="checkbox"/>	American elm*	<input checked="" type="checkbox"/>
Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input type="checkbox"/>		
Shagbark hickory*	<input type="checkbox"/>		
White ash	<input checked="" type="checkbox"/>		
Green ash	<input checked="" type="checkbox"/>		
White pine	<input type="checkbox"/>		
Eastern Cottonwood*	<input type="checkbox"/>		
White oak*	<input type="checkbox"/>		
Pin oak	<input type="checkbox"/>		
Northern red oak	<input type="checkbox"/>		

**Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form**

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/27/11    **Sample Plot:** MIB3 (approx. 46 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Active agricultural fields (corn) to the north of the plot; open/overgrown field and forest to the west/southwest; riparian wetlands corridor to the north/northeast; cluster of single-family homes to the south along Sherman Hill Road.
Hedge Rows & Linear Features Present in Landscape	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Railroad tracks and NYS Rt 22 along west boundary; Old Rt 22 along east boundary; Sherman Hill Road along southeast boundary; linear tree/shrub/thicket rows along NYS Rt 22 and bordering active agricultural and abandoned fields as well as riparian wetlands corridor; tree/shrub/thicket rows and Sherman Hill Road frame the perimeter of the sample plot.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured in the site vicinity and a maternity colony potentially exists within 5 miles of the site vicinity.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx. 360 ft. to 550ft. amsl
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Muncie site characterized by mowed areas around barn/farmhouse complex, active agricultural fields, abandoned/overgrown open fields, scrub/shrub lands, hedge/thicket and tree rows, and deciduous forest in the southwest corner; riparian and emergent/shrub wetlands form north-northeast boundary of sample plot. Plot MIB3 is predominantly abandoned overgrown field with scattered Eastern Red Cedar and River Birch.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plot absent any forest cover except for narrow rows to west, north, and northwest.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees >= 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees >= 9 dbh: 0
Lightning-struck (e.g., split) trees >= 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species >= 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/27/11    **Sample Plot:** MIB3 (approx. 46 acres)

**Investigator(s):** A. Russo; D. Corelli

Potential den trees, broken limbs, large stumps/snags >= 9 dbh and over 9 ft in height.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees over 26 dbh: 0
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Estimated percent of plot/surrounding area that is forested.	<5% (X); 10-20% (); 20-60%(); 60-100%()		Plot absent any forest cover except for narrow rows to west, north, and northwest.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input type="checkbox"/>	<input type="checkbox"/>	Not applicable; no suitable roost trees observed.
Is the sample plot representative of potential summer roosting habitat for the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Typical of abandoned overgrown field habitat on the Muncie site.

### Conclusions

Plot MIB3 is typical of abandoned agricultural field and pasture on and off the Muncie site; no live/dead shagbark hickory present; no trees with dead/damaged/exfoliating bark features; no large 26 dbh trees; no trees with suitable characteristics present in the plot; plot not considered representative of roosting or foraging habitat; riparian corridor and emergent/shrub wetlands adjacent to sample plot represent potential foraging habitat.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input type="checkbox"/>

**Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form**

**Project/Site:** CVE Laydown

**Cnty:** Dutchess

**Date:** 9/27/11

**Sample Plot:** MIB3 (approx. 46 acres)

**Investigator(s):** A. Russo; D. Corelli

Sugar maple*	<input type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input type="checkbox"/>		
Shagbark hickory*	<input type="checkbox"/>		
White ash	<input checked="" type="checkbox"/>		
Green ash	<input checked="" type="checkbox"/>		
White pine	<input type="checkbox"/>		
Eastern Cottonwood*	<input checked="" type="checkbox"/>		
White oak*	<input type="checkbox"/>		
Pin oak	<input type="checkbox"/>		
Northern red oak	<input type="checkbox"/>		

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/27/11    **Sample Plot:** MIB2 (approx. 6 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Active agricultural fields (corn) to the north of the plot; open/overgrown field, stream/wetlands corridor, and deciduous forest to the south of the sample plot.
Hedge Rows & Linear Features Present in Landscape	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Railroad tracks and NYS Rt 22 along west boundary; Old Rt 22 along east boundary; Sherman Hill Road along southeast boundary; linear tree/shrub/thicket rows along NYS Rt 22 and bordering active agricultural and abandoned fields as well as riparian wetlands corridor.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured in the site vicinity and a maternity colony potentially exists within 5 miles of the site vicinity.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx. 360 ft. to 550ft. amsl
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Muncie site characterized by mowed areas around barn/farmhouse complex, active agricultural fields, abandoned/overgrown open fields, scrub/shrub lands, hedge/thicket and tree rows, and deciduous forest in the southwest corner; stream and emergent/shrub wetlands form southern boundary of sample plot. Plot MIB2 comprises a linear shrub/thicket/tree row with associated riparian and forested wetlands.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Narrow, linear nature of plot allows for direct sunlight penetration along edges.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees ≥/≤ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees ≥/≤ 9 dbh: 0
Lightning-struck (e.g., split) trees ≥/≤ 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0
Dead/dying/damaged trees of any species ≥/≤ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 5
Potential den trees, broken limbs, large stumps/snags ≥/≤ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 4

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/27/11    **Sample Plot:** MIB2 (approx. 6 acres)

**Investigator(s):** A. Russo; D. Corelli

Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees over 26 dbh: 3 (1 multi-trunk Red Maple @ 26 dbh; 1 White Ash @ 26 dbh; 1 Eastern Cottonwood @ 26 dbh)
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: Red Maple, White Ash, Green Ash, Eastern Cottonwood
Estimated percent of plot/surrounding area that is forested.	<5% (X); 10-20% (X); 20-60%(); 60-100%(X)		<5% adjoining field and riparian corridor; 10-20% along edges to field/riparian corridor; 60-100% with shrub/thicket/tree row.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Trees with suitable/preferred characteristics have canopies and/or sub-canopies with 2m; many trees vine covered.
Is the sample plot representative of potential summer roosting habitat for the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Typical of linear tree/shrub/thicket rows that form southern edge of corn fields as well as vegetated rows that define perimeter of abandoned overgrown fields in southwest portion of site.

### Conclusions

Plot MIB2 is typical of other narrow, linear tree/shrub/thicket rows on site; no live/dead shagbark hickory present; few trees with dead/damaged/exfoliating bark features; isolated and limited number of large 26 dbh trees; large trees of 26 dbh all with dense canopy and surrounding sub-canopy; little solar exposure except for trees along outer edges of row; forest cover/canopy properties vary from open, to semi-open to closed; although some trees with suitable characteristics are present in the plot, they are few and limited in nature; plot not considered representative of preferred roosting or foraging habitat overall; riparian corridor and emergent/shrub wetlands adjacent to sample plot represent potential foraging habitat.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

**Suitable & Preferred (\*) Roost Trees**

**Present in/adjacent to sample plot?**

Red maple	<input checked="" type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input checked="" type="checkbox"/>
Sugar maple*	<input checked="" type="checkbox"/>	Slippery elm	<input type="checkbox"/>

Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

Project/Site: CVE Laydown

Cnty: Dutchess

Date:9/27/11

Sample Plot: MIB2 (approx. 6 acres)

Investigator(s): A. Russo; D. Corelli

Yellow birch	<input type="checkbox"/>
Gray birch	<input type="checkbox"/>
Bitternut hickory	<input type="checkbox"/>
Pignut hickory	<input type="checkbox"/>
Shagbark hickory*	<input type="checkbox"/>
White ash	<input checked="" type="checkbox"/>
Green ash	<input checked="" type="checkbox"/>
White pine	<input type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input type="checkbox"/>

**Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form**

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/28/11    **Sample Plot:** MIB5B (approx. 6.5 acres)

**Investigator(s):** A. Russo; D. Corelli

PREFERRED HABITAT FEATURE*	ATTRIBUTE/FEATURE PRESENT?		NOTES / COMMENTS
	YES	NO	
<b>Surrounding Area</b>			
Low density development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Barn/farmhouse complex around site entrance; active and abandoned agricultural fields and pasture; low density residential along Sherman Hill Road; sample plot MIB5B located within an approximate 35-acre forested area in the southern portion of the Muncie site.
Hedge Rows & Linear Features Present in Landscape	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Railroad tracks and NYS Rt 22 along west boundary; Old Rt 22 and Sherman Hill Road along east/southeast boundary; linear tree and shrub rows along NYS Rt 22 and bordering active agricultural and abandoned fields as well as riparian wetlands corridor.
<b>General Location</b>			
≤ 40 Miles from Known Hibernacula in Ulster County, NY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
≤ 2 Miles from Known Summer Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	USFWS (7/20/09) reports that 2 males captured in the site vicinity and a maternity colony potentially exists within 5 miles of the site vicinity.
≤ 900' AMSL**	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site ranges from approx. 360 ft. to 550ft. amsl
<b>Site Land Features</b>			
Are wooded areas (both interior and edges), streams, wetlands, open water present on/within the surrounding area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Muncie site characterized by mowed areas around barn/farmhouse complex, active agricultural fields, abandoned/overgrown open fields, scrub/shrub lands, hedge/thicket and tree rows, and deciduous forest in the southwest corner; riparian wetlands corridor bisects the site east to west; riparian wetlands corridor forms northern boundary of sample plot MIB5B. Plot MIB5B is an approx. 1,400' x 200' sample corridor that is predominantly deciduous forest (Sugar Maple, White Oak, Red Oak, Hickory spp., Black Cherry on higher elevations and slopes) with Red Cedar, shrub, thicket, overgrown field habitat on lower elevations and around perimeter of forested areas.
Does the plot/surrounding area have southern, southeastern and/or southwestern solar exposure with partial canopy to allow for direct sunlight penetration?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Closed to semi-closed canopy limits sunlight penetration throughout majority of plot; southern portion of plot on highest elevation has a semi-open canopy and open understory allowing for some solar exposure.
<b>Suitable Roost Trees (SRT)/Land Cover*</b>			
Live Shagbark Hickory trees >= 9 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees >= 9 dbh: 8
Lightning-struck (e.g., split) trees >= 9 inches dbh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Number of trees with these conditions: 0

**Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form**

<b>Project/Site: CVE Laydown</b>	<b>Cnty: Dutchess</b>	<b>Date:9/28/11</b>	<b>Sample Plot: MIB5B (approx. 6.5 acres)</b>
<b>Investigator(s): A. Russo; D. Corelli</b>			
Dead/dying/damaged trees of any species $\geq$ 9 inches dbh with crevices/boles and/or at least 10% to 25% exfoliating bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 1
Potential den trees, broken limbs, large stumps/snags $\geq$ 9 dbh and over 9 ft in height.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees with these conditions: 11 (of varying species but predominantly Sugar Maple)
Small trees with the above characteristics from 3 inches dbh to 5 inches dbh?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Live trees of any species over 26 inches dbh.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of trees over 26 dbh: 10 ( 9 Sugar Maples @ 31, 31, 34, 36, 36, 36, 36, 36, & 37 dbh; 1 White Oak @ 55 dbh); all 26+ dbh specimens in live condition with full crowns; many Sugar Maples with split cavities/crevices at trunk forks and/or limb separations; specimen White Oak in live condition with several sub-canopy dead branches at least 6 inches dbh.
Are any preferred/suitable native tree species from the list below with suitable characteristics present in the plot and/or adjacent area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dominant species observed: large diameter Sugar Maples with thick bark (flared vertical plates, semi-ridged, or with overlapping shingles); some trees with boles/crevices/dead limbs; Pignut and Shagbark Hickory present in high number; large White Oak specimen with no understory present at forest edge adjoining small undeveloped residential lot.
Estimated percent of plot/surrounding area that is forested.	<5% (); 10-20% (); 20-60%(); 60-100%(X)		Sample plot and surrounding area forested with a closed to semi-closed canopy; higher elevations (450' - 550' amsl) and western facing slopes with generally open understory.
Are at least 16 SRTs present per/acre?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Highest concentration of suitable/preferred trees located in the south-central portion of this forested area on elevations above 500' amsl.
Do SRTs have an overarching canopy or understory canopy within 2 meters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample plot and surrounding area forested with a closed to semi-closed canopy; higher elevations (500+ amsl) and western facing slopes with generally open understory; areas below 500' have a closed sub-canopy within 2m of larger trees; southern portion of plot near a planned residential cul-de-sac has an open understory; large dbh trees in this approximate 1-2 acre area have broad crowns but no understory within 2m.
Is the sample plot representative of potential summer roosting habitat for the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Linear sample plot representative of deciduous uplands prevalent in the surrounding area of the Muncie Site; similar areas found immediately to the east of NYS Rt 22 and the Metro North tracks as well as to the northeast of the site in the Nellie Hill area.

## Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

**Project/Site:** CVE Laydown    **Cnty:** Dutchess    **Date:** 9/28/11    **Sample Plot:** MIB5B (approx. 6.5 acres)

**Investigator(s):** A. Russo; D. Corelli

### Conclusions

Center line of linear sample plot (approx. 1,400' x 200') begins approx. 650' ft. east of NYS Rt 22 and proceeds in a general northerly direction from the southern Muncey site property limit to the riparian stream/wetlands corridor; 8 live Shagbark Hickory of preferred dbh present as well as other live tree species considered suitable/preferred although in lower numbers; plot and surrounding area characterized by a relatively closed canopy and dense understory; 10 trees => 26 dbh present all in live condition; 12 trees either dead/stressed with exfoliating bark, crevices/cavities observed; plot and surrounding area predominantly forested; majority of suitable/preferred trees lack general southern exposure and do not have sufficient solar exposure; 1-2 acre area at southern end of plot near cul-de-sac has a semi-open canopy and open sub-canopy; majority of plot not considered representative of preferred summer roosting or foraging habitat overall; southern portion of plot MIB5B near cul-de-sac has a higher concentration of suitable/preferred characteristics, tree species, and tree conditions and has a higher potential to be used as summer roosting as well as foraging habitat.

\*\* 900' AMSL is the maximum elevation The US Fish & Wildlife Service has observed Indiana bat maternity colonies-use in New York State.

\*Habitat characteristics considered by the FWS essential for Indiana Bat summer roosting include the following: exfoliating bark of larger (=> 9 inches dbh) diameter dead and dying trees that retain large areas of exfoliating/peeling bark; lightning struck/split trees and/or trees with cavities, crevices along trunk or larger branches; direct solar exposure of the roost tree to provide thermoregulation of the young; roost trees unimpeded by vines or small branches in the sub-canopy; trees that are tall relative to surrounding trees especially near forest edges or along openings to potential forage areas; overall structure and characteristics of the tree believed more important than the particular species of tree although certain tree species are considered suitable/preferred.

### Suitable & Preferred (\*) Roost Trees

### Present in/adjacent to sample plot?

Red maple	<input type="checkbox"/>	Post oak	<input type="checkbox"/>
Silver maple*	<input type="checkbox"/>	American elm*	<input checked="" type="checkbox"/>
Sugar maple*	<input checked="" type="checkbox"/>	Slippery elm	<input type="checkbox"/>
Yellow birch	<input type="checkbox"/>		
Gray birch	<input type="checkbox"/>		
Bitternut hickory	<input type="checkbox"/>		
Pignut hickory	<input checked="" type="checkbox"/>		
Shagbark hickory*	<input checked="" type="checkbox"/>		
White ash	<input type="checkbox"/>		
Green ash	<input type="checkbox"/>		

Indiana Bat (*Myotis sodalis*) Summer Habitat Suitability Assessment Form

Project/Site: CVE Laydown

Cnty: Dutchess

Date: 9/28/11

Sample Plot: MIB5B (approx. 6.5 acres)

Investigator(s): A. Russo; D. Corelli

White pine	<input type="checkbox"/>
Eastern Cottonwood*	<input checked="" type="checkbox"/>
White oak*	<input checked="" type="checkbox"/>
Pin oak	<input type="checkbox"/>
Northern red oak	<input type="checkbox"/>