

**Wallkill River National Wildlife Refuge  
2002 Vernal Pool Study**

**Observers:**

Kevin Holcomb, Wildlife Biologist  
Travis Goodie, Biological Intern

**Focal Vernal Pools & Percent Vernal Pool Occupied:**

<u>Name</u>	<u>UTM (Zone 18)</u>	<u>Survey Dates</u>
Headquarters #1	0536231e 4561643n	4/2, 4/12, 4/24
<i>HQ 1-A</i>	<i>0536162e 4561578n</i>	<i>3/22, 4/2, 4/12, 4/24</i>
<i>HQ 1-B</i>	<i>0536255e 4561607n</i>	<i>3/22, 4/3, 4/12, 4/24</i>
<i>HQ 1-C</i>	<i>0536237e 4561623n</i>	<i>3/22, 4/3, 4/12, 4/24</i>
 Judge Beach Rd. #1	 0534766e 4561395n	 4/4, 4/12, 4/24
<i>JB 1-A</i>	<i>0534745e 4561528n</i>	<i>3/22, 4/4, 4/12, 4/24</i>
<i>JB 1-B</i>	<i>0534769e 4561604n</i>	<i>3/22, 4/4, 4/12, 4/24</i>
 Scenic Lakes Rd. (North #1)	 0535757e 4559545n	 3/27, 4/12, 4/24
 Wood Duck Nature Trail #2	 0534953e 4558216n	 4/3, 4/12, 4/24

**Other Notes:**

Please call Kevin Holcomb, Wildlife Biologist at (973) 702-7266 or e-mail [kevin\\_holcomb@fws.gov](mailto:kevin_holcomb@fws.gov) if you have questions.



VERNAL POOL DATA SHEET  
New Jersey Division of Fish and Wildlife  
Endangered and Nongame Species Program

**GENERAL INFO**

SITE NAME/NUMBER: Wood Duck Native Trail #2 OBSERVER: Kevin Hakomb  
ORGANIZATION: USFWS DATE: 4/3 - 4/24 COUNTY: Sussex  
MUNICIPALITY: Wantage Twp. TOPO QUAD/BLOCK: 2002 Hamburg Quad (8) / Block 3  
LANDOWNER: USFWS - Wallkill River NWR  
DIRECTIONS TO SITE: Southern end of Wood Duck Native Trail

**POOL CHARACTERISTICS**

POOL TYPE (check): ☐ natural swale/depression ☒ excavated pit/ditch ☐ impoundment

WATER LEVEL (check): ☒ full ☐ >50% full ☐ <50% full ☐ dry

POOL DIMENSIONS (at max capacity): 22 m x 3 m

WATER QUALITY (check): ☐ clear ☒ tea-colored ☐ algae-green

STRUCTURE OF VEGETATION WITHIN/OVERHANGING POOL (ESTIMATE % COVER):

25 trees 10 scrub/shrub ☐ floating vegetation ☐ emergent vegetation

DOMINANT PLANT SPECIES WITHIN/OVERHANGING POOL (optional): \_\_\_\_\_

SURROUNDING HABITAT (check all that apply): ☐ upland forest ☒ forested wetlands

☒ emergent/scrub-shrub wetland ☒ agricultural field/grassland ☐ suburban

GENERAL NOTES/COMMENTS: \_\_\_\_\_  
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		Please check appropriate box			
	STATUS	ADULT	JUVENILE/LARVA	VOCALIZATION	EGG MAS
<b>OBLIGATE VERNAL POOL HERPETOFAUNA</b>					
1) spotted salamander ( <i>Ambystoma maculatum</i> )	stable				128
2) eastern tiger salamander ( <i>Ambystoma t. tigrinum</i> )	endangered				
3) marbled salamander ( <i>Ambystoma opacum</i> )	special concern				
4) Jefferson salamander ( <i>Ambystoma jeffersonianum</i> )	special concern				
5) blue-spotted salamander ( <i>Ambystoma laterale</i> )	endangered				
6) Jefferson x blue-spotted salamander ( <i>Ambystoma jeffersonianum</i> x <i>laterale</i> )	no status				
7) wood frog ( <i>Rana sylvatica</i> )	stable				16
8) eastern spadefoot toad ( <i>Scaphiopus holbrookii</i> )	unknown				

#### **FACULTATIVE VERNAL POOL HERPETOFAUNA**

1) long-tailed salamander ( <i>Eurycea l. longicauda</i> )	threatened				
2) red-spotted newt ( <i>Notophthalmus v. viridescens</i> )	stable				
3) four-toed salamander ( <i>Hemidactylium scutatum</i> )	unknown				
4) northern spring peeper ( <i>Pseudacris crucifer</i> )	stable			✓	
5) New Jersey chorus frog ( <i>Pseudacris triseriata kalmii</i> )	unknown				
6) upland chorus frog ( <i>Pseudacris triseriata ferarium</i> )	unknown				
7) northern cricket frog ( <i>Acris c. crepitans</i> )	stable				
8) northern gray treefrog ( <i>Hyla versicolor</i> )	stable				
9) southern gray treefrog ( <i>Hyla chrysoscelis</i> )	endangered				
10) pine barrens treefrog ( <i>Hyla andersonii</i> )	threatened				
11) american toad ( <i>Bufo americanus</i> )	stable				
12) fowlers toad ( <i>Bufo woodhousii fowleri</i> )	special concern				
13) green frog ( <i>Rana clamitans melanota</i> )	stable	✓			
14) bullfrog ( <i>Rana catesbeiana</i> )	stable				
15) carpenter frog ( <i>Rana virgatipes</i> )	special concern				
16) pickerel frog ( <i>Rana palustris</i> )	stable				
17) southern leopard frog ( <i>Rana utricularia</i> )	stable				
18) spotted turtle ( <i>Clemmys guttata</i> )	special concern				
19) wood turtle ( <i>Clemmys insculpta</i> )	threatened				
20) eastern painted turtle ( <i>Chrysemys p. picta</i> )	stable				
21) eastern mud turtle ( <i>Kinosternon subrubrum</i> )	stable				
22) common snapping turtle ( <i>Chelydra serpentina</i> )	stable				

#### **VERNAL POOL INVERTEBRATES (Please check appropriate line)**

mosquito \_\_ fairy shrimp \_\_ caddisfly \_\_ predaceous diving beetle \_\_ crawling water beetle \_\_ water scavenger beetle \_\_  
 whirligig beetle \_\_ damselfly \_\_ dragonfly \_\_ backswimmer \_\_ water boatman \_\_ water scorpion \_\_ giant water bug \_\_ water strider \_\_  
 fishfly \_\_ mayfly \_\_ chironomid midge \_\_ phantom midge \_\_ springtail \_\_ water mites \_\_ amphipod \_\_ isopod \_\_  
 clam shrimp \_\_ ostracod \_\_ daphnia \_\_ copepod \_\_ snail \_\_ fingernail clam \_\_ horsehair worm \_\_ planaria \_\_ leech \_\_  
 aquatic oligochaete worms \_\_





VERNAL POOL DATA SHEET  
New Jersey Division of Fish and Wildlife  
Endangered and Nongame Species Program

**GENERAL INFO**

SITE NAME/NUMBER: Scenic Lakes (North #1) OBSERVER: Kevin Holcomb  
ORGANIZATION: USFWS DATE: 3/27 - 4/24 COUNTY: Sussex  
MUNICIPALITY: Hardyston Twp. TOPO QUAD/BLOCK: 2002 Hamburg Quad (8) / Block 3  
LANDOWNER: USFWS - Wallkill River NWR  
DIRECTIONS TO SITE: Scenic Lakes Rd. Refuge Parking Area #11  
Approximately 50 m north

**POOL CHARACTERISTICS**

POOL TYPE (check): ☒ natural swale/depression ☐ excavated pit/ditch ☐ impoundment

WATER LEVEL (check): ☒ full ☐ >50% full ☐ <50% full ☐ dry

POOL DIMENSIONS (at max capacity): 42 m x 17 m

WATER QUALITY (check): ☐ clear ☒ tea-colored ☐ algae-green

STRUCTURE OF VEGETATION WITHIN/OVERHANGING POOL (ESTIMATE % COVER):

10 trees 50 scrub/shrub ☐ floating vegetation 40 emergent vegetation

DOMINANT PLANT SPECIES WITHIN/OVERHANGING POOL (optional): \_\_\_\_\_

SURROUNDING HABITAT (check all that apply): ☐ upland forest ☒ forested wetlands

☐ emergent/scrub-shrub wetland ☒ agricultural field/grassland ☐ suburban

GENERAL NOTES/COMMENTS: \_\_\_\_\_  
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	Please check appropriate box				
	STATUS	ADULT	JUVENILE/LARVA	VOCALIZATION	EGG MAS
<b>OBLIGATE VERNAL POOL HERPETOFAUNA</b>					
1) spotted salamander ( <i>Ambystoma maculatum</i> )	stable				✓47
2) eastern tiger salamander ( <i>Ambystoma t. tigrinum</i> )	endangered				
3) marbled salamander ( <i>Ambystoma opacum</i> )	special concern				
4) Jefferson salamander ( <i>Ambystoma jeffersonianum</i> )	special concern				
5) blue-spotted salamander ( <i>Ambystoma laterale</i> )	endangered				
6) Jefferson x blue-spotted salamander ( <i>Ambystoma jeffersonianum</i> x <i>laterale</i> )	no status				
7) wood frog ( <i>Rana sylvatica</i> )	stable	✓	✓	✓	✓44
8) eastern spadefoot toad ( <i>Scaphiopus holbrookii</i> )	unknown				

**FACULTATIVE VERNAL POOL HERPETOFAUNA**

1) long-tailed salamander ( <i>Eurycea l. longicauda</i> )	threatened				
2) red-spotted newt ( <i>Notophthalmus v. viridescens</i> )	stable				
3) four-toed salamander ( <i>Hemidactylium scutatum</i> )	unknown				
4) northern spring peeper ( <i>Pseudacris crucifer</i> )	stable			✓	
5) New Jersey chorus frog ( <i>Pseudacris triseriata kalmii</i> )	unknown				
6) upland chorus frog ( <i>Pseudacris triseriata ferarium</i> )	unknown				
7) northern cricket frog ( <i>Acris c. crepitans</i> )	stable				
8) northern gray treefrog ( <i>Hyla versicolor</i> )	stable				
9) southern gray treefrog ( <i>Hyla chrysoscelis</i> )	endangered				
10) pine barrens treefrog ( <i>Hyla andersonii</i> )	threatened				
11) american toad ( <i>Bufo americanus</i> )	stable				
12) fowlers toad ( <i>Bufo woodhousii fowleri</i> )	special concern				
13) green frog ( <i>Rana clamitans melanota</i> )	stable	✓			
14) bullfrog ( <i>Rana catesbeiana</i> )	stable				
15) carpenter frog ( <i>Rana virgatipes</i> )	special concern				
16) pickerel frog ( <i>Rana palustris</i> )	stable				
17) southern leopard frog ( <i>Rana utricularia</i> )	stable				
18) spotted turtle ( <i>Clemmys guttata</i> )	special concern				
19) wood turtle ( <i>Clemmys insculpta</i> )	threatened				
20) eastern painted turtle ( <i>Chrysemys p. picta</i> )	stable				
21) eastern mud turtle ( <i>Kinosternon subrubrum</i> )	stable				
22) common snapping turtle ( <i>Chelydra serpentina</i> )	stable	✓			

**VERNAL POOL INVERTEBRATES (Please check appropriate line)**

mosquito ☒ fairy shrimp ☒ caddisfly ☐ predaceous diving beetle ☐ crawling water beetle ☐ water scavenger beetle ☐  
 whirligig beetle ☐ damselfly ☐ dragonfly ☐ backswimmer ☐ water boatman ☒ water scorpion ☐ giant water bug ☐ water strider ☒  
 fishfly ☐ mayfly ☐ chironomid midge ☐ phantom midge ☐ springtail ☐ water mites ☐ amphipod ☐ isopod ☐  
 clam shrimp ☐ ostracod ☐ daphnia ☐ copepod ☐ snail ☒ fingernail clam ☐ horsehair worm ☐ planaria ☐ leech ☐  
 aquatic oligochaete worms ☐



VERNAL POOL DATA SHEET  
New Jersey Division of Fish and Wildlife  
Endangered and Nongame Species Program

**GENERAL INFO**

SITE NAME/NUMBER: Headquarters #1 OBSERVER: Kevin Hokomb  
ORGANIZATION: USFWS DATE: 4/2 - 4/24 COUNTY: Sussex  
MUNICIPALITY: Vernon Twp TOPO QUAD/BLOCK: 2002 Hamburg Quad (8) / Block 3  
LANDOWNER: USFWS - Wallkill River NWR  
DIRECTIONS TO SITE: Dagmar Dale Nature trail

**POOL CHARACTERISTICS**

POOL TYPE (check): ☐ natural swale/depression ☒ excavated pit/ditch ☐ impoundment

WATER LEVEL (check): ☒ full ☐ >50% full ☐ <50% full ☐ dry

POOL DIMENSIONS (at max capacity): 42 m x 5.4 m

WATER QUALITY (check): ☐ clear ☒ tea-colored ☐ algae-green

STRUCTURE OF VEGETATION WITHIN/OVERHANGING POOL (ESTIMATE % COVER):

☐ trees 50 scrub/shrub ☐ floating vegetation 25 emergent vegetation

DOMINANT PLANT SPECIES WITHIN/OVERHANGING POOL (optional): \_\_\_\_\_

SURROUNDING HABITAT (check all that apply): ☒ upland forest ☒ forested wetlands

☒ emergent/scrub-shrub wetland ☒ agricultural field/grassland ☐ suburban

GENERAL NOTES/COMMENTS: \_\_\_\_\_  
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	Please check appropriate box				
	STATUS	ADULT	JUVENILE/LARVA	VOCALIZATION	EGG MAS
<b>OBLIGATE VERNAL POOL HERPETOFAUNA</b>					
1) spotted salamander ( <i>Ambystoma maculatum</i> )	stable				✓ 2
2) eastern tiger salamander ( <i>Ambystoma t. tigrinum</i> )	endangered				
3) marbled salamander ( <i>Ambystoma opacum</i> )	special concern				
4) Jefferson salamander ( <i>Ambystoma jeffersonianum</i> )	special concern				
5) blue-spotted salamander ( <i>Ambystoma laterale</i> )	endangered				
6) Jefferson x blue-spotted salamander ( <i>Ambystoma jeffersonianum</i> x <i>laterale</i> )	no status				
7) wood frog ( <i>Rana sylvatica</i> )	stable			✓	✓ 23
8) eastern spadefoot toad ( <i>Scaphiopus holbrookii</i> )	unknown				

#### **FACULTATIVE VERNAL POOL HERPETOFAUNA**

1) long-tailed salamander ( <i>Eurycea l. longicauda</i> )	threatened				
2) red-spotted newt ( <i>Notophthalmus v. viridescens</i> )	stable				
3) four-toed salamander ( <i>Hemidactylium scutatum</i> )	unknown				
4) northern spring peeper ( <i>Pseudacris crucifer</i> )	stable			✓	
5) New Jersey chorus frog ( <i>Pseudacris triseriata kalmii</i> )	unknown				
6) upland chorus frog ( <i>Pseudacris triseriata ferarium</i> )	unknown				
7) northern cricket frog ( <i>Acris c. crepitans</i> )	stable				
8) northern gray treefrog ( <i>Hyla versicolor</i> )	stable				
9) southern gray treefrog ( <i>Hyla chrysoscelis</i> )	endangered				
10) pine barrens treefrog ( <i>Hyla andersonii</i> )	threatened				
11) american toad ( <i>Bufo americanus</i> )	stable				
12) fowlers toad ( <i>Bufo woodhousii fowleri</i> )	special concern				
13) green frog ( <i>Rana clamitans melanota</i> )	stable				
14) bullfrog ( <i>Rana catesbeiana</i> )	stable				
15) carpenter frog ( <i>Rana virgatipes</i> )	special concern				
16) pickerel frog ( <i>Rana palustris</i> )	stable				
17) southern leopard frog ( <i>Rana utricularia</i> )	stable				
18) spotted turtle ( <i>Clemmys guttata</i> )	special concern				
19) wood turtle ( <i>Clemmys insculpta</i> )	threatened				
20) eastern painted turtle ( <i>Chrysemys p. picta</i> )	stable				
21) eastern mud turtle ( <i>Kinosternon subrubrum</i> )	stable				
22) common snapping turtle ( <i>Chelydra serpentina</i> )	stable				

#### **VERNAL POOL INVERTEBRATES (Please check appropriate line)**

mosquito \_\_\_ fairy shrimp \_\_\_ caddisfly \_\_\_ predaceous diving beetle \_\_\_ crawling water beetle \_\_\_ water scavenger beetle \_\_\_  
 whirligig beetle \_\_\_ damselfly \_\_\_ dragonfly \_\_\_ backswimmer \_\_\_ water boatman \_\_\_ water scorpion \_\_\_ giant water bug \_\_\_ water strider \_\_\_  
 fishfly \_\_\_ mayfly \_\_\_ chironomid midge \_\_\_ phantom midge \_\_\_ springtail \_\_\_ water mites \_\_\_ amphipod \_\_\_ isopod \_\_\_  
 clam shrimp \_\_\_ ostracod \_\_\_ daphnia \_\_\_ copepod \_\_\_ snail \_\_\_ fingernail clam \_\_\_ horsehair worm \_\_\_ planaria \_\_\_ leech \_\_\_  
 aquatic oligochaete worms \_\_\_

Last Revised: 03/21/02





VERNAL POOL DATA SHEET  
New Jersey Division of Fish and Wildlife  
Endangered and Nongame Species Program

**GENERAL INFO**

SITE NAME/NUMBER: Judge Beach Rd #1 OBSERVER: Kevin Hokomb  
ORGANIZATION: USFWS DATE: 4/4 - 4/24 COUNTY: Sussex  
MUNICIPALITY: Wantage Twp TOPO QUAD/BLOCK: 2002 Hamburg Quad (8) / Block 3  
LANDOWNER: USFWS - Wallkill River NWR  
DIRECTIONS TO SITE: Follow Farmer Farm Rd. Across Rail Road Bed  
Proceed SW along Papa Heating Creek.

**POOL CHARACTERISTICS**

POOL TYPE (check): ☒ natural swale/depression ☐ excavated pit/ditch ☐ impoundment

WATER LEVEL (check): ☐ full ☒ >50% full ☐ <50% full ☐ dry

POOL DIMENSIONS (at max capacity): 19.5 m x 9.6 m

WATER QUALITY (check): ☐ clear ☒ tea-colored ☐ algae-green

STRUCTURE OF VEGETATION WITHIN/OVERHANGING POOL (ESTIMATE % COVER):

10 trees 25 scrub/shrub ☐ floating vegetation ☐ emergent vegetation

DOMINANT PLANT SPECIES WITHIN/OVERHANGING POOL (optional): \_\_\_\_\_

SURROUNDING HABITAT (check all that apply): ☐ upland forest ☒ forested wetlands

☐ emergent/scrub-shrub wetland ☒ agricultural field/grassland ☐ suburban

GENERAL NOTES/COMMENTS: \_\_\_\_\_  
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	Please check appropriate box				
	STATUS	ADULT	JUVENILE/LARVA	VOCALIZATION	EGG MAS
<b>OBLIGATE VERNAL POOL HERPETOFAUNA</b>					
1) spotted salamander ( <i>Ambystoma maculatum</i> )	stable				✓ 14
2) eastern tiger salamander ( <i>Ambystoma t. tigrinum</i> )	endangered				
3) marbled salamander ( <i>Ambystoma opacum</i> )	special concern				
4) Jefferson salamander ( <i>Ambystoma jeffersonianum</i> )	special concern				
5) blue-spotted salamander ( <i>Ambystoma laterale</i> )	endangered				
6) Jefferson x blue-spotted salamander ( <i>Ambystoma jeffersonianum</i> x <i>laterale</i> )	no status				
7) wood frog ( <i>Rana sylvatica</i> )	stable			✓	✓ 76
8) eastern spadefoot toad ( <i>Scaphiopus holbrookii</i> )	unknown				

#### **FACULTATIVE VERNAL POOL HERPETOFAUNA**

1) long-tailed salamander ( <i>Eurycea l. longicauda</i> )	threatened				
2) red-spotted newt ( <i>Notophthalmus v. viridescens</i> )	stable				
3) four-toed salamander ( <i>Hemidactylium scutatum</i> )	unknown				
4) northern spring peeper ( <i>Pseudacris crucifer</i> )	stable				
5) New Jersey chorus frog ( <i>Pseudacris triseriata kalmii</i> )	unknown				
6) upland chorus frog ( <i>Pseudacris triseriata ferarium</i> )	unknown				
7) northern cricket frog ( <i>Acris c. crepitans</i> )	stable				
8) northern gray treefrog ( <i>Hyla versicolor</i> )	stable				
9) southern gray treefrog ( <i>Hyla chrysoscelis</i> )	endangered				
10) pine barrens treefrog ( <i>Hyla andersonii</i> )	threatened				
11) american toad ( <i>Bufo americanus</i> )	stable				
12) fowlers toad ( <i>Bufo woodhousii fowleri</i> )	special concern				
13) green frog ( <i>Rana clamitans melanota</i> )	stable	✓			
14) bullfrog ( <i>Rana catesbeiana</i> )	stable				
15) carpenter frog ( <i>Rana virgatipes</i> )	special concern				
16) pickerel frog ( <i>Rana palustris</i> )	stable				
17) southern leopard frog ( <i>Rana utricularia</i> )	stable				
18) spotted turtle ( <i>Clemmys guttata</i> )	special concern				
19) wood turtle ( <i>Clemmys insculpta</i> )	threatened				
20) eastern painted turtle ( <i>Chrysemys p. picta</i> )	stable				
21) eastern mud turtle ( <i>Kinosternon subrubrum</i> )	stable				
22) common snapping turtle ( <i>Chelydra serpentina</i> )	stable				

#### **VERNAL POOL INVERTEBRATES (Please check appropriate line)**

mosquito ☒ fairy shrimp ☐ caddisfly ☒ predaceous diving beetle ☐ crawling water beetle ☐ water scavenger beetle ☐  
 whirligig beetle ☐ damselfly ☐ dragonfly ☐ backswimmer ☐ water boatman ☒ water scorpion ☐ giant water bug ☐ water strider ☐  
 fishfly ☐ mayfly ☐ chironomid midge ☐ phantom midge ☐ springtail ☐ water mites ☐ amphipod ☐ isopod ☐  
 clam shrimp ☐ ostracod ☐ daphnia ☐ copepod ☐ snail ☒ fingernail clam ☐ horsehair worm ☐ planaria ☐ leech ☐  
 aquatic oligochaete worms ☐

Khristi A Wilkins

03/07/2002 02:22 PM

To: Don Lima/R5/FWS/DOI@FWS, Kate O'Brien/R5/FWS/DOI@FWS, Jeff Haas/R5/FWS/DOI@FWS, Paul Steblein/R5/FWS/DOI@FWS, Michael Horne/R5/FWS/DOI@FWS, Maurice Mills/R5/FWS/DOI@FWS, Paul Hess/R5/FWS/DOI@FWS, Stephanie Koch/R5/FWS/DOI@FWS, Debra Kimbrell-Anderson/R5/FWS/DOI@FWS, Florence James/R5/FWS/DOI@FWS, Deborah Melvin/R5/FWS/DOI@FWS, Sara Williams/R5/FWS/DOI@FWS, Laurie Wunder/R5/FWS/DOI@FWS, Kevin Holcomb/R5/FWS/DOI@FWS, Al Zelle/R5/FWS/DOI@FWS, Michael Langlois/R5/FWS/DOI@FWS, Linda Welch/R5/FWS/DOI@FWS, Ken Sturm/R5/FWS/DOI@FWS, Annabella Larsen/R5/FWS/DOI@FWS, Linda Ziemba/R5/FWS/DOI@FWS, adamsm2@allegheny.edu

cc:

Subject: IMPORTANT - REVISED DATA SHEETS FOR VERNAL POOLS

HI Refuge Biologists:

I made a few changes on the data sheets for the Vernal Pool study.  
Here are the changes:

- 1) I added ERROR (+/- ) in meters for the Location Coordinates. This is the position error of the coordinates from your GPS unit (for example, on the GARMIN GPS III+ receiver, enter the EPE value). Try to get readings with as little error as possible (ideally, error should be < +/- 10 m, but do the best you can). Error is now listed on the "Focal Vernal Pool Location and Habitat Data Sheet" and on the "Percent Vernal Pools Occupied Data Sheet"
- 2) On the "Percent Vernal Pools Occupied Data Sheet" I added several fields:
  - a) After the Date, you will notice a field called "# of 50 m sections". This helps you keep track of the FIVE 50 m sections that you are surveying for the 250 m transect (5 x 50 m = 250 m). We pace out how many steps it takes to do 50 m (for me, 70 paces), so we just count 70 paces 5 times and tally these 5 times on the sheet to keep track of the distance covered.
  - a) New Vernal Pool Name or Number - you can assign a name or number to each new vernal pool you encounter along the transects
  - b) Record the distance along the transect from which you will hike in to the vernal pool (e.g., 120 m) (Distance Along Transect)
  - c) Record the distance to the vernal pool from the transect (Distance from Transect)
  - d) Record the bearing/direction from the transect that you head in order to get to the vernal pool (e.g., 200 degrees)

When you do the transects, make sure to take the GPS unit with you to record the coordinates of vernal pools you find. Also, it might help to use flagging tape to flag the transect and also the way to get to the vernal pools, since you will have to revisit these pools 4 times.

#### SOME OTHER IMPORTANT NOTES:

- 1) We would also like you to revisit the FOUR FOCAL VERNAL POOLS FOUR TIMES over the course of the study to record SPECIES PRESENCE. Go ahead and use the "PERCENT VERNAL POOLS OCCUPIED DATA SHEET" and just write in the Focal Vernal Pool Name on the data sheet and don't write in anything for the New Vernal Pool Name or Number, Distance along Transect, Distance From Transect, Bearing information.
- 2) If you can not run complete 250 m transects in certain directions (N, S, E, W) because you hit the border of the Refuge, a huge highway, a salt marsh, please write down on the data sheet when the transect has to end (e.g., transect ends at 110 m because salt marsh extends the rest of the transect). Alternatively, if you would like to run complete 250 m transects, you could alter the compass directions of the transects a bit. Just make sure that the transects are at least 45-60 degrees apart to avoid overlap



among the transects in your search area for vernal pools.

Thank you very much! Here are the new data sheets to use for 2002.

Call me at 301.497.5875 or email me at: [robin\\_jung@usgs.gov](mailto:robin_jung@usgs.gov) if you have any questions!

Robin



EGG MASS DATA SHEET.doc



# United States Department of the Interior

USGS PATUXENT WILDLIFE RESEARCH CENTER  
12100 BEECH FOREST ROAD  
LAUREL, MARYLAND 20708-4038

30 January 2002

**Dear Refuge, Park and State Biologists Participating in the NE ARMI (Northeast Amphibian Research and Monitoring Initiative) Vernal Pool Study:**

Enclosed please find protocols and data sheets for the vernal pool study we will be conducting this year. I changed the protocols a bit from last year to incorporate many of the comments from participants in 2001. The two biggest changes from 2001 are that we are using a double-observer DEPENDENT technique to estimate numbers of egg masses at FOUR vernal pools, and adding a PERCENT VERNAL POOLS OCCUPIED approach around TWO of the focal vernal pools where we conduct egg mass counts.

I will not require additional training for those Refuges and Parks who participated last year, unless entirely different personnel will be conducting the surveys. For the NEW REFUGES and PARKS participating in 2002, I am requiring that at least one person who will be conducting the surveys attend a 1.5 day training session at the Patuxent Research Refuge sometime in early-mid March (dates to be determined based on weather and availability of personnel). USGS will pay for the travel costs to this training session, as well as provide funds to help defray personnel costs in carrying out the project (approximately \$1,000-\$1,500 per Refuge). I will also supply you with equipment that you need.

I greatly appreciate your interest and help in working on this project. Please contact me as soon as possible if you can participate in the vernal pool surveys. Once I hear from all of you, I will work with Jan Taylor on getting funds distributed and equipment ready.

I look forward to working with you. Let's hope for a wonderful spring and a good vernal pool amphibian breeding season!!

Sincerely,

Robin E. Jung, Ph.D.  
USGS Patuxent Wildlife Research Center  
12100 Beech Forest Rd.  
Laurel, MD 20708  
301.497.5875  
301.497.5784 (FAX)  
robin\_jung@usgs.gov

Totals are summarized on the inside  
front cover of each folder,

hand-written on sticky notes.



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Egg Masses	4/2/07
Spotted Sal.	Wood Frog
2	23

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Egg Masses	4/12/07
Spotted Sal.	
1	

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Egg Masses	
Spotted Sal.	4/24/08
1	

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# FOCAL VERNAL POOL LOCATION AND HABITAT DATA SHEET

LOCALITY: Wallkill River NWR VERNAL POOL NAME: Headquarters #1

OBSERVER: K. Holcomb / T. Goodie DATE: March 22, 2002

DETAILED DIRECTIONS TO SITE:

Behind Refuge HQ (Rt 565) off Dagmar Dale Nature Trail

UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536231 UTM N: 4561643 ERROR: +/- 9.6 m

LATITUDE (DDMMSS.SS): 41°12.320' LONGITUDE: 74°34.069' ELEVATION: 124 ☒ m ☐ ft

POOL MAX. LENGTH: 42 m POOL MAX. WIDTH: 5.4 m POOL MAX. DEPTH: 83 cm

POOL PERMANENCY: ☐ temporary (dries annually) ☒ semipermanent (sometimes dries) ☐ permanent (never dries)

POND TYPE (Check either Natural, Beaver-created, Artificial/Man-made, or Unknown):

☐ Natural (e.g., oxbow, vernal pool)

☐ Beaver-created

☒ Artificial/Man-Made - If pool is artificial/man-made, pick best description below:

☒ borrow/gravel pit ☐ roadside ditch ☐ farm pond ☐ impoundment ☐ other: \_\_\_\_\_

☐ Unknown

SITE TYPE: ☐ upland-isolated (not part of larger wetland)

☒ bottomland-isolated (part of a river or lake floodplain)

☐ wetland complex (associated with a larger wetland complex)

FISH PRESENT: ☒ No ☐ Yes If Yes, list Species: \_\_\_\_\_

DISTANCE TO FOREST FROM WATER'S EDGE: 0 ☒ m ☐ ft

DISTANCE TO NEAREST ROAD: 570 ☒ m ☐ ft

ROAD IS: ☒ PAVED ☐ GRAVEL ☐ DIRT

ROAD CONDITIONS AT NIGHT: ☐ Light Traffic (< 10 cars) ☒ Heavy Traffic (≥ 10 cars)

**FOR THE FOLLOWING, RANK the amount of pond area in which each type occurs**

(does not need to sum to 100%): 0 = 0%, 1 = 1-10%, 2 = 11-25%, 3 = 26-50%, 4 = 51-75%, 5 = 76-100%

AQUATIC SUBSTRATE: Leaf Litter 2 Sticks/Logs 3

AQUATIC VEGETATION: SAV \_\_\_\_\_ Herb \_\_\_\_\_ Emergent 2 Cattail \_\_\_\_\_ Shrub 3 Tree \_\_\_\_\_ Other \_\_\_\_\_

**LAND USE/COVER AROUND VERNAL POOL:**

Estimate % of each of the land use/cover categories within 50 m of pool. Estimates should total 100%:

50 % Woodland/Forest

- ☐ Hardwood (> 75% deciduous)  
☐ Softwood (> 75% evergreen)  
☐ Mixed Hardwood/Softwood (< 75% each)

If % woodland/forest is entered, record if canopy cover over the vernal pool is heavy or moderate:

- ☐ Heavy (> 50% canopy cover of trees/shrubs > 6 ft. tall)  
☐ Moderate (< 50% canopy cover of trees/shrubs < 6 ft. tall)

24 % Agriculture/Fields

25 % Meadow/Marsh

\_\_\_\_ % Residential/Urban/Suburban

\_\_\_\_ % Industrial

\_\_\_\_ % Mining

\_\_\_\_ % Pasture/Rangeland

\_\_\_\_ % Road

1 % Other: Dagmar Lake Nature Trail (old Farm Rd. gravel)

**NOTES:**

See photos

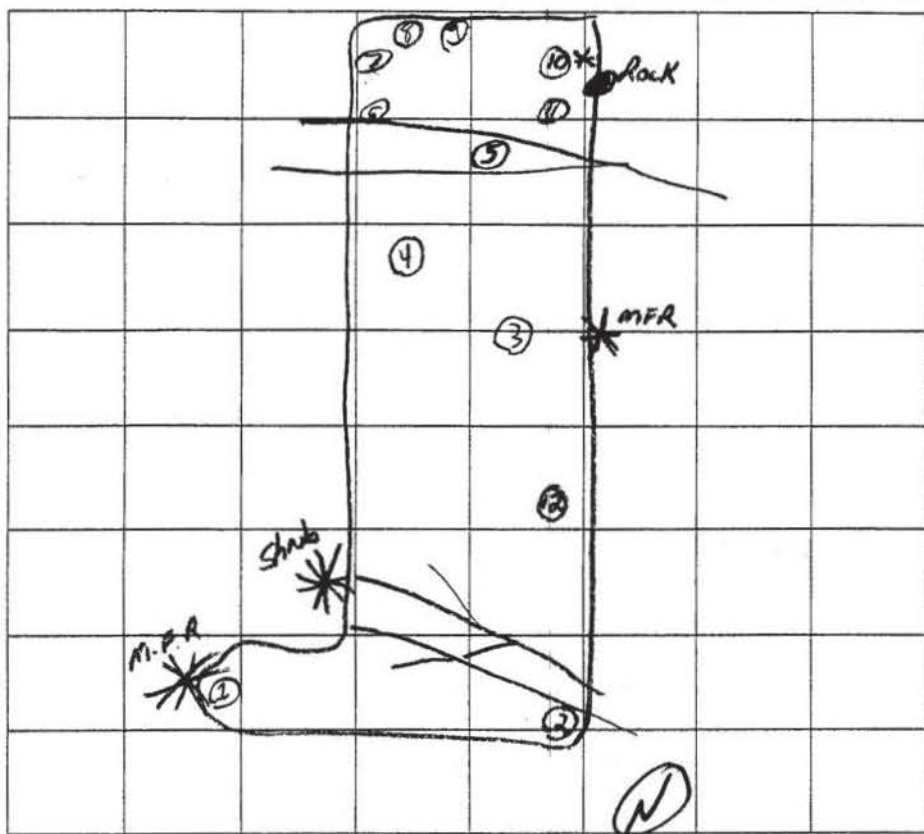
Possible drain pipe at north end

Cleared multi-flora rose + shrubs from around pond

WOFR calling 3/21/02



# FOCAL VERNAL POOL EGG MASS COUNT DATA SHEET



LOCALITY:

WRNWR

VERNAL POOL NAME:

Hq#1

DATE: 4/2/02

TIME BEGIN: 1100

TIME END: 1430

GRID SPACING IS 6 m  
INDICATE NORTH ON MAP

OBSERVER 1

H. Holcomb

OBSERVER 2

T. Gaudie

\* INDICATE WITH LINE  
WHEN OBSERVERS SWITCH

Species	# Egg Masses		Dead	Species	# Egg Masses		Dead
	OBS 1	OBS 2			OBS 1	OBS 2	
① S	1						
② W		1					
③ S	1						
④ W	1						
⑤ W	2						
⑥ W		1					
⑦ W	1						
⑧ W	13						
⑨ W	1						
<hr/>							
⑩ W		1					
⑪ W		1					
⑫ W		1					

LOCALITY: WRNWR VERNAL POOL NAME: H2 #1

Date: 4/2/02 Sky Code: 2 Wind Code: 1 Previous Day Precipitation? ☐ YES ☒ NO

Air Temp.: 53 52.5 Water Temp.: 45.5 46 ☐ °C ☒ °F

Pool Max. Depth: 77 cm Water Level: ☒ FULL ☐ ¾ FULL ☐ ½ FULL ☐ ¼ FULL ☐ < ¼ ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☒ YES ☐ NO  
*Mucky black water*

OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults
<i>Unk.</i>					<i>30</i>		

NOTES:

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.

WALKER River NWB

HQ#1

DATE: 4/12/2002

TIME BEGIN: 1500

TIME END: 1533

GRID SPACING IS ~5 m  
INDICATE NORTH ON MAP

K. Holcomb

T. Goodie

\* INDICATE WITH LINE  
WHEN OBSERVERS SWITCH

Species	# Egg Masses OBS 1	OBS 2	Dead
Ambystoma maculatum	6	9	0
Bombina orientalis	7	8	0
Cynophrynus regilla	1	0	0
Dipsosaurus dorsalis	0	0	0
Eumeces fasciatus	0	0	0
Lacerta agilis	0	0	0
Ninia diademata	0	0	0
Rana sylvatica	0	0	0
Triturus cristatus	0	0	0
Xenopus laevis	0	0	0
Zootoca variegata	0	0	0
Total	14	17	0

5 1

LOCALITY: Wallich's River NWR VERNAL POOL NAME: HQ #1

Date: 4/12/2002 Sky Code: 5 Wind Code: 1 Previous Day Precipitation? ☐ YES ☒ NO

Air Temp.: 57°F Water Temp.: 48°F ☐ °C ☒ °F

Pool Max. Depth: 73 cm Water Level: ☒ FULL ☐ ¾ FULL ☐ ½ FULL ☐ ¼ FULL ☐ <¼ ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☒ YES ☐ NO

OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults
GRFR							1

NOTES:

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.



WRNWR

HQ #1

DATE: 4/24/08

TIME BEGIN: 1315

TIME END: 1340

GRID SPACING IS 5.25 m  
INDICATE NORTH ON MAP

K. Holcomb

T. Goodie

\* INDICATE WITH LINE  
WHEN OBSERVERS SWITCH

[illegible]

LOCALITY: WRNWA VERNAL POOL NAME: HQ #1

Date: 4/24/02 Sky Code: 0 Wind Code: 1 Previous Day Precipitation? ☐ YES ☒ NO

Air Temp.: 60°F Water Temp.: 53°F ☐ °C ☒ °F

Pool Max. Depth: 76 cm Water Level: ☒ FULL ☐ ¾ FULL ☐ ½ FULL ☐ ¼ FULL ☐ < ¼ ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☐ YES ☒ NO

OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults

NOTES:

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Headquarters #1  
OBSERVER: K. Holcomb / T. Goode DATE: 3/22/02 # of 50 m sections:         
TRANSECT: N S E (W) NEW VERNAL POOL NAME OR NUMBER: HQ 1-A  
DISTANCE ALONG TRANSECT: 100 m DISTANCE FROM TRANSECT: 24 m BEARING: 270 ° SW  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536162 UTM N: 4561578 ERROR:        +/-m  
LATITUDE (DDMMSS.SS):        LONGITUDE:        ELEVATION: 126 ☒ m ☐ ft  
POOL MAX. LENGTH: 2 m POOL MAX. WIDTH: 3 m POOL MAX. DEPTH: 48 cm

[illegible]

LOCALITY: W R NWR FOCAL VERNAL POOL NAME: Headwaters #1  
OBSERVER: K. Holcomb / T. Goodie DATE: 3/22/02 # of 50 m sections:         
TRANSECT: N S (E) W NEW VERNAL POOL NAME OR NUMBER: HQ - 1 - B  
DISTANCE ALONG TRANSECT: 0 m DISTANCE FROM TRANSECT: 25 m BEARING: 132 ° Se  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536255 UTM N: 4561607 ERROR:        +/-m  
LATITUDE (DDMMSS.SS):                      LONGITUDE:                      ELEVATION: 115 ☒ m ☐ ft  
POOL MAX. LENGTH: 2 m POOL MAX. WIDTH: 1 m POOL MAX. DEPTH: 8 cm

[illegible]

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Headquarters #1  
OBSERVER: K. Holcomb / T. Goodie DATE: 3/22/02 # of 50 m sections: \_\_\_\_\_  
TRANSECT: N S (E) W NEW VERNAL POOL NAME OR NUMBER: HQ 1-C  
DISTANCE ALONG TRANSECT: 10 m DISTANCE FROM TRANSECT: 0 m BEARING: 90 ° E  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536237 UTM N: 4561623 ERROR: \_\_\_\_\_ +/-m  
LATITUDE (DDMMSS.SS): \_\_\_\_\_ LONGITUDE: \_\_\_\_\_ ELEVATION: 124 ☒ m ☐ ft  
POOL MAX. LENGTH: 1 m POOL MAX. WIDTH: 1 m POOL MAX. DEPTH: 6 cm

[illegible]

LOCALITY: \_\_\_\_\_ FOCAL VERNAL POOL NAME: \_\_\_\_\_

OBSERVER: \_\_\_\_\_ DATE: \_\_\_\_\_ # of 50 m sections: \_\_\_\_\_

TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: \_\_\_\_\_

DISTANCE ALONG TRANSECT: \_\_\_\_\_ m DISTANCE FROM TRANSECT: \_\_\_\_\_ m BEARING: \_\_\_\_\_ °

UTM ZONE: \_\_\_\_\_ UTM DATUM: NAD 83 UTM E: \_\_\_\_\_ UTM N: \_\_\_\_\_ ERROR: \_\_\_\_\_ +/-m

LATITUDE (DDMMSS.SS): \_\_\_\_\_ LONGITUDE: \_\_\_\_\_ ELEVATION: \_\_\_\_\_ ☐ m ☐ ft

POOL MAX. LENGTH: \_\_\_\_\_ m POOL MAX. WIDTH: \_\_\_\_\_ m POOL MAX. DEPTH: \_\_\_\_\_ cm

[illegible]



WP  
# 26

WP  
#  
29

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Headquarters #1  
OBSERVER: K. Holcomb / T. Goodie DATE: 4/3/2002 # of 50 m sections: \_\_\_\_\_  
TRANSECT: N S (E) W NEW VERNAL POOL NAME OR NUMBER: HQ 1-B  
DISTANCE ALONG TRANSECT: 0 m DISTANCE FROM TRANSECT: 25 m BEARING: 132° SE  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536255 UTM N: 4561607 ERROR: \_\_\_\_\_ +/-m  
LATITUDE (DDMMSS.SS): \_\_\_\_\_ LONGITUDE: \_\_\_\_\_ ELEVATION: 115 ☒ m ☐ ft  
POOL MAX. LENGTH: 2 m POOL MAX. WIDTH: 1 m POOL MAX. DEPTH: 8 cm

[illegible]

## PERCENT VERNAL POOLS OCCUPIED DATA SHEET

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Headquarters #1

OBSERVER: K. Holcomb / T. Goodie DATE: 4/3/2002 # of 50 m sections:           

TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: HQ 1-C

DISTANCE ALONG TRANSECT: 10 m DISTANCE FROM TRANSECT: 0 m BEARING: 90 ° E

UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536237 UTM N: 4561623 ERROR:        +/-m

LATITUDE (DDMMSS.SS): \_\_\_\_\_ LONGITUDE: \_\_\_\_\_ ELEVATION: 124 ☒ m ☐ ft

POOL MAX. LENGTH:      /      m POOL MAX. WIDTH:      /      m POOL MAX. DEPTH: 6 cm

[illegible]

LOCALITY: \_\_\_\_\_ FOCAL VERNAL POOL NAME: \_\_\_\_\_

OBSERVER: \_\_\_\_\_ DATE: \_\_\_\_\_ # of 50 m sections: \_\_\_\_\_

TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: \_\_\_\_\_

DISTANCE ALONG TRANSECT: \_\_\_\_\_ m DISTANCE FROM TRANSECT: \_\_\_\_\_ m BEARING: \_\_\_\_\_ °

UTM ZONE: \_\_\_\_\_ UTM DATUM: NAD 83 UTM E: \_\_\_\_\_ UTM N: \_\_\_\_\_ ERROR: \_\_\_\_\_ +/-m

LATITUDE (DDMMSS.SS): \_\_\_\_\_ LONGITUDE: \_\_\_\_\_ ELEVATION: \_\_\_\_\_ ☐ m ☐ ft

POOL MAX. LENGTH: \_\_\_\_\_ m POOL MAX. WIDTH: \_\_\_\_\_ m POOL MAX. DEPTH: \_\_\_\_\_ cm

[illegible]

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Headquarters #1  
OBSERVER: K. Holcomb / T. Goodie DATE: 4/12/2002 # of 50 m sections:       
TRANSECT: N S E (W) NEW VERNAL POOL NAME OR NUMBER: HQ 1-A  
DISTANCE ALONG TRANSECT: 100 m DISTANCE FROM TRANSECT: 24 m BEARING: 220° SW  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536162 UTM N: 4561578 ERROR:      +/-m  
LATITUDE (DDMMSS.SS):      LONGITUDE:      ELEVATION: 126 ☒ m ☐ ft  
POOL MAX. LENGTH: 2 m POOL MAX. WIDTH: 3 m POOL MAX. DEPTH: 48 cm

[illegible]

LOCALITY: Wallkill River near FOCAL VERNAL POOL NAME: Headwaters #1  
OBSERVER: K. Holcomb / T. Goodie DATE: 4/12/2002 # of 50 m sections:         
TRANSECT: N S (E) W NEW VERNAL POOL NAME OR NUMBER: HQ 1-B  
DISTANCE ALONG TRANSECT: 0 m DISTANCE FROM TRANSECT: 25 m BEARING: 132 ° 50  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 05 36255 UTM N: 4561607 ERROR:        +/-m  
LATITUDE (DDMMSS.SS):        LONGITUDE:        ELEVATION: 115 ☒ m ☐ ft  
POOL MAX. LENGTH: 2 m POOL MAX. WIDTH: 1 m POOL MAX. DEPTH: 8 cm

[illegible]

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Headquarters #1  
OBSERVER: K. Holcomb / T. Goolie DATE: 4/12/02 # of 50 m sections: \_\_\_\_\_  
TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: HQ 1C  
DISTANCE ALONG TRANSECT: 10 m DISTANCE FROM TRANSECT: 0 m BEARING: 90 ° E  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536237 UTM N: 4561623 ERROR: \_\_\_\_\_ +/-m  
LATITUDE (DDMMSS.SS): \_\_\_\_\_ LONGITUDE: \_\_\_\_\_ ELEVATION: 124 ☒ m ☐ ft  
POOL MAX. LENGTH: 1 m POOL MAX. WIDTH: 1 m POOL MAX. DEPTH: 6 cm

[illegible]

LOCALITY: \_\_\_\_\_ FOCAL VERNAL POOL NAME: \_\_\_\_\_

OBSERVER: \_\_\_\_\_ DATE: \_\_\_\_\_ # of 50 m sections: \_\_\_\_\_

TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: \_\_\_\_\_

DISTANCE ALONG TRANSECT: \_\_\_\_\_ m DISTANCE FROM TRANSECT: \_\_\_\_\_ m BEARING: \_\_\_\_\_ °

UTM ZONE: \_\_\_\_\_ UTM DATUM: NAD 83 UTM E: \_\_\_\_\_ UTM N: \_\_\_\_\_ ERROR: \_\_\_\_\_ +/-m

LATITUDE (DDMMSS.SS): \_\_\_\_\_ LONGITUDE: \_\_\_\_\_ ELEVATION: \_\_\_\_\_ ☐ m ☐ ft

POOL MAX. LENGTH: \_\_\_\_\_ m POOL MAX. WIDTH: \_\_\_\_\_ m POOL MAX. DEPTH: \_\_\_\_\_ cm

[illegible]



LOCALITY: Wailkill River NWR FOCAL VERNAL POOL NAME: Headquarters #1  
OBSERVER: H. Holcomb / T. Goodie DATE: 4/24/02 # of 50 m sections:         
TRANSECT: N S E (W) NEW VERNAL POOL NAME OR NUMBER: HQ 1-A  
DISTANCE ALONG TRANSECT: 100 m DISTANCE FROM TRANSECT: 24 m BEARING: 220° SW  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536162 UTM N: 4561578 ERROR:        +/-m  
LATITUDE (DDMMSS.SS):        LONGITUDE:        ELEVATION: 126 ☒ m ☐ ft  
POOL MAX. LENGTH: 1 1/2 m POOL MAX. WIDTH: 2 1/2 m POOL MAX. DEPTH: 40 cm

[illegible]

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Headquarters #1  
OBSERVER: K. Holcomb / T. Goode DATE: 7/24/02 # of 50 m sections:         
TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: HQ 1-B  
DISTANCE ALONG TRANSECT: 0 m DISTANCE FROM TRANSECT: 25 m BEARING: 132° Se  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536255 UTM N: 4561607 ERROR:        +/-m  
LATITUDE (DDMMSS.SS):        LONGITUDE:        ELEVATION: 115 ☒ m ☐ ft  
POOL MAX. LENGTH: 1 1/2 m POOL MAX. WIDTH: 1 m POOL MAX. DEPTH: 6 cm

[illegible]

LOCALITY: Waikiki River NWR FOCAL VERNAL POOL NAME: Hardyquarters #1  
OBSERVER: K. Holcomb / T. Gude DATE: 4/24/02 # of 50 m sections:         
TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: HQ 1-C  
DISTANCE ALONG TRANSECT: 10 m DISTANCE FROM TRANSECT: 0 m BEARING: 90 ° E  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0536237 UTM N: 4561623 ERROR:        +/-m  
LATITUDE (DDMMSS.SS):                      LONGITUDE:                      ELEVATION: 124 ☒ m ☐ ft  
POOL MAX. LENGTH: 1 m POOL MAX. WIDTH: 1 m POOL MAX. DEPTH: 4 cm

[illegible]

LOCALITY: \_\_\_\_\_ FOCAL VERNAL POOL NAME: \_\_\_\_\_

OBSERVER: \_\_\_\_\_ DATE: \_\_\_\_\_ # of 50 m sections: \_\_\_\_\_

TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: \_\_\_\_\_

DISTANCE ALONG TRANSECT: \_\_\_\_\_ m DISTANCE FROM TRANSECT: \_\_\_\_\_ m BEARING: \_\_\_\_\_ °

UTM ZONE: \_\_\_\_\_ UTM DATUM: NAD 83 UTM E: \_\_\_\_\_ UTM N: \_\_\_\_\_ ERROR: \_\_\_\_\_ +/-m

LATITUDE (DDMMSS.SS): \_\_\_\_\_ LONGITUDE: \_\_\_\_\_ ELEVATION: \_\_\_\_\_ ☐ m ☐ ft

POOL MAX. LENGTH: \_\_\_\_\_ m POOL MAX. WIDTH: \_\_\_\_\_ m POOL MAX. DEPTH: \_\_\_\_\_ cm

[illegible]



Vernal Pool  
Headquarters #1

1





Vernal Pool

HQ #1

3/22/2002



3

00





Walkkill River NWR - Tract #22  
4/20/2001 Vernal Pool  
Scenic Lakes Rd - North





Walkkill River NWR - Tract #22  
5/9/2001 Vernal Pool  
Scenic Lakes Rd - North





Wallkill River NWR - Tract #22  
5/9/2001 Vernal Pool  
Scenic Lakes Rd - South



Wallkill River NWR - Tract #22  
5/9/2001 Vernal Pool  
Scenic Lakes Rd - South





Wallkill River NWR - Tract #22  
5/9/2001 Vernal Pool  
Scenic Lakes Rd - South



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4/3/02 Egg Masses

Spotted Salamander | Wood Frog

8

16

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4/12/02 Egg Masses

Spotted Salamander | Wood Frog

28

15

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4/24/02 Spotted Salamander

23



# FOCAL VERNAL POOL LOCATION AND HABITAT DATA SHEET

LOCALITY: Wallkill River NWR VERNAL POOL NAME: Wood Duck Nature Trail #2

OBSERVER: K. Holcomb / T. Goodie DATE: 4/3/2002

DETAILED DIRECTIONS TO SITE:

End of Wood Duck Nature Trail (East side)

UTM ZONE: 18 UTM DATUM: NAD 83 UTME: 0534953 UTMN: 4558216 ERROR: +/- 10 m

LATITUDE (DDMMSS.SS): \_\_\_\_\_ LONGITUDE: \_\_\_\_\_ ELEVATION: 132 ☒ m ☐ ft

POOL MAX. LENGTH: 22 m POOL MAX. WIDTH: 3 m POOL MAX. DEPTH: 19 cm

POOL PERMANENCY: ☐ temporary (dries annually) ☒ semipermanent (sometimes dries) ☐ permanent (never dries)

POND TYPE (Check either Natural, Beaver-created, Artificial/Man-made, or Unknown):

☐ Natural (e.g., oxbow, vernal pool)

☐ Beaver-created

☒ Artificial/Man-Made - If pool is artificial/man-made, pick best description below:

☐ borrow/gravel pit ☐ roadside ditch ☐ farm pond ☐ impoundment ☒ other: Side of Rail-road bed used as Nature Trail.

☐ Unknown

SITE TYPE: ☐ upland-isolated (not part of larger wetland)

☒ bottomland-isolated (part of a river or lake floodplain)

☐ wetland complex (associated with a larger wetland complex)

FISH PRESENT: ☒ No ☐ Yes If Yes, list Species: \_\_\_\_\_

DISTANCE TO FOREST FROM WATER'S EDGE: 0 ☒ m ☐ ft

DISTANCE TO NEAREST ROAD: 4/5 ☒ m ☐ ft At. 23

ROAD IS: ☒ PAVED ☐ GRAVEL ☐ DIRT

ROAD CONDITIONS AT NIGHT: ☐ Light Traffic (< 10 cars) ☒ Heavy Traffic (≥ 10 cars)

FOR THE FOLLOWING, RANK the amount of pond area in which each type occurs

(does not need to sum to 100%): 0 = 0%, 1 = 1-10%, 2 = 11-25%, 3 = 26-50%, 4 = 51-75%, 5 = 76-100%

AQUATIC SUBSTRATE: Leaf Litter 5 Sticks/Logs 3

AQUATIC VEGETATION: SAV \_\_\_\_\_ Herb \_\_\_\_\_ Emergent \_\_\_\_\_ Cattail \_\_\_\_\_ Shrub 1 Tree 2 Other \_\_\_\_\_

**LAND USE/COVER AROUND VERNAL POOL:**

Estimate % of each of the land use/cover categories within 50 m of pool. Estimates should total 100%:

20 % Woodland/Forest

- ☒ Hardwood (> 75% deciduous)
- ☐ Softwood (> 75% evergreen)
- ☐ Mixed Hardwood/Softwood (< 75% each)

If % woodland/forest is entered, record if canopy cover over the vernal pool is heavy or moderate:

- ☒ Heavy (> 50% canopy cover of trees/shrubs > 6 ft. tall)
- ☐ Moderate (< 50% canopy cover of trees/shrubs < 6 ft. tall)

9 % Agriculture/Fields

70 % Meadow/Marsh

% Residential/Urban/Suburban

% Industrial

% Mining

\_\_\_\_\_% Pasture/Rangeland

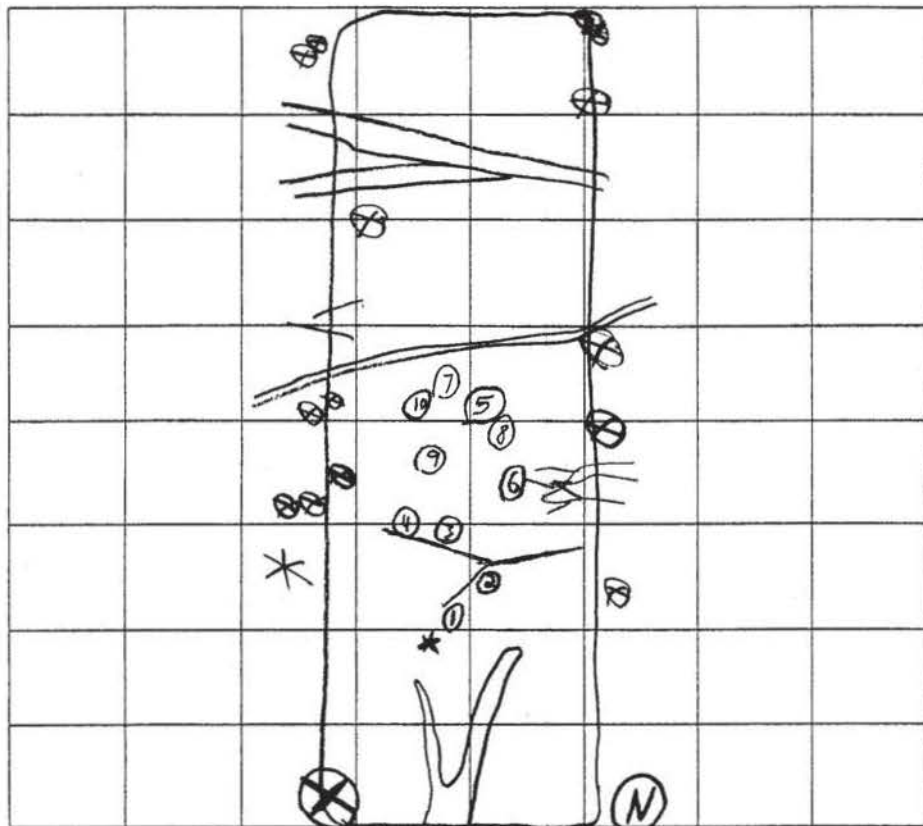
% Road

1 % Other: Rail-road bed (Wood Duck Nature Trail)

**NOTES:**

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

# FOCAL VERNAL POOL EGG MASS COUNT DATA SHEET



LOCALITY:

WRNWR

VERNAL POOL NAME:

Wood Trail #2

DATE: 4/3/02

TIME BEGIN: 1055

TIME END: 1120

GRID SPACING IS 2.5 m  
INDICATE NORTH ON MAP

OBSERVER 1

Holcomb

OBSERVER 2

Gundie

\* INDICATE WITH LINE  
WHEN OBSERVERS SWITCH

Species	# Egg Masses OBS 1	OBS 2	Dead	Species	# Egg Masses OBS 1	OBS 2	Dead
① S	1						
② W	1						
③ W	1						
④ S	2						
⑤ S	1						
⑥ W	14						
⑦ S	1						
⑧ S	1						
⑨ S	1						
⑩ S	1	1					

LOCALITY: WAWR VERNAL POOL NAME: Wood Duck Trail #2

Date: 4/3/02 Sky Code: 1 Wind Code: 1 Previous Day Precipitation? ☐ YES ☒ NO

Air Temp.: 72.5 Water Temp.: 58.6 ☐ °C ☒ °F

Pool Max. Depth: 19 cm Water Level: ☐ FULL ☐ ¾ FULL ☐ ½ FULL ☒ ¼ FULL ☐ < ¼ ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☐ YES ☒ NO

OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults
WFR							2
GRFR							2

NOTES:

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.

A hand-drawn map of a lake, oriented vertically, plotted on a grid. The lake's boundary is irregular. Inside the lake, there are 12 numbered points (1-12) and several 'X' marks. A diagonal line runs from the upper left towards the center. Another line runs from the lower left towards the center. A third line runs from the upper right towards the center. A fourth line runs from the lower right towards the center. A fifth line runs from the upper left towards the lower right. A sixth line runs from the upper right towards the lower left. A seventh line runs from the lower left towards the lower right. A eighth line runs from the lower right towards the upper left. A ninth line runs from the upper left towards the upper right. A tenth line runs from the upper right towards the upper left. A eleventh line runs from the lower left towards the upper left. A twelfth line runs from the lower right towards the upper right. A thirteenth line runs from the upper left towards the lower left. A fourteenth line runs from the upper right towards the lower right. A fifteenth line runs from the lower left towards the upper right. A sixteenth line runs from the lower right towards the upper left. A seventeenth line runs from the upper left towards the lower right. A eighteenth line runs from the upper right towards the lower left. A nineteenth line runs from the lower left towards the upper left. A twentieth line runs from the lower right towards the upper right. A twenty-first line runs from the upper left towards the upper right. A twenty-second line runs from the upper right towards the upper left. A twenty-third line runs from the lower left towards the lower right. A twenty-fourth line runs from the lower right towards the lower left. A twenty-fifth line runs from the upper left towards the lower left. A twenty-sixth line runs from the upper right towards the lower right. A twenty-seventh line runs from the lower left towards the upper right. A twenty-eighth line runs from the lower right towards the upper left. A twenty-ninth line runs from the upper left towards the lower right. A thirtieth line runs from the upper right towards the lower left. A thirty-first line runs from the lower left towards the upper left. A thirty-second line runs from the lower right towards the upper right. A thirty-third line runs from the upper left towards the upper right. A thirty-fourth line runs from the upper right towards the upper left. A thirty-fifth line runs from the lower left towards the lower right. A thirty-sixth line runs from the lower right towards the lower left. A thirty-seventh line runs from the upper left towards the lower left. A thirty-eighth line runs from the upper right towards the lower right. A thirty-ninth line runs from the lower left towards the upper right. A fortieth line runs from the lower right towards the upper left. A forty-first line runs from the upper left towards the lower right. A forty-second line runs from the upper right towards the lower left. A forty-third line runs from the lower left towards the upper left. A forty-fourth line runs from the lower right towards the upper right. A forty-fifth line runs from the upper left towards the upper right. A forty-sixth line runs from the upper right towards the upper left. A forty-seventh line runs from the lower left towards the lower right. A forty-eighth line runs from the lower right towards the lower left. A forty-ninth line runs from the upper left towards the lower left. A fiftieth line runs from the upper right towards the lower right. A fifty-first line runs from the lower left towards the upper right. A fifty-second line runs from the lower right towards the upper left. A fifty-third line runs from the upper left towards the lower right. A fifty-fourth line runs from the upper right towards the lower left. A fifty-fifth line runs from the lower left towards the upper left. A fifty-sixth line runs from the lower right towards the upper right. A fifty-seventh line runs from the upper left towards the upper right. A fifty-eighth line runs from the upper right towards the upper left. A fifty-ninth line runs from the lower left towards the lower right. A sixtieth line runs from the lower right towards the lower left. A sixty-first line runs from the upper left towards the lower left. A sixty-second line runs from the upper right towards the lower right. A sixty-third line runs from the lower left towards the upper right. A sixty-fourth line runs from the lower right towards the upper left. A sixty-fifth line runs from the upper left towards the lower right. A sixty-sixth line runs from the upper right towards the lower left. A sixty-seventh line runs from the lower left towards the upper left. A sixty-eighth line runs from the lower right towards the upper right. A sixty-ninth line runs from the upper left towards the upper right. A seventieth line runs from the upper right towards the upper left. A seventy-first line runs from the lower left towards the lower right. A seventy-second line runs from the lower right towards the lower left. A seventy-third line runs from the upper left towards the lower left. A seventy-fourth line runs from the upper right towards the lower right. A seventy-fifth line runs from the lower left towards the upper right. A seventy-sixth line runs from the lower right towards the upper left. A seventy-seventh line runs from the upper left towards the lower right. A seventy-eighth line runs from the upper right towards the lower left. A seventy-ninth line runs from the lower left towards the upper left. A eightieth line runs from the lower right towards the upper right. A eighty-first line runs from the upper left towards the upper right. A eighty-second line runs from the upper right towards the upper left. A eighty-third line runs from the lower left towards the lower right. A eighty-fourth line runs from the lower right towards the lower left. A eighty-fifth line runs from the upper left towards the lower left. A eighty-sixth line runs from the upper right towards the lower right. A eighty-seventh line runs from the lower left towards the upper right. A eighty-eighth line runs from the lower right towards the upper left. A eighty-ninth line runs from the upper left towards the lower right. A ninetieth line runs from the upper right towards the lower left. A ninety-first line runs from the lower left towards the upper left. A ninety-second line runs from the lower right towards the upper right. A ninety-third line runs from the upper left towards the upper right. A ninety-fourth line runs from the upper right towards the upper left. A ninety-fifth line runs from the lower left towards the lower right. A ninety-sixth line runs from the lower right towards the lower left. A ninety-seventh line runs from the upper left towards the lower left. A ninety-eighth line runs from the upper right towards the lower right. A ninety-ninth line runs from the lower left towards the upper right. A hundredth line runs from the lower right towards the upper left.

Wallkill River MNR

Wood Duck Nature Trail #2

DATE: 4/12/2002

TIME BEGIN: 0900

TIME END: 0935

GRID SPACING IS 2.75 m  
INDICATE NORTH ON MAP

K. Holcomb

T. Goodie

\* INDICATE WITH LINE  
WHEN OBSERVERS SWITCH

[illegible]



LOCALITY: Wallkill River NWR VERNAL POOL NAME: Wood Duck Nature trail #2

Date: 4/12/02 Sky Code: 2 Wind Code: 2 Previous Day Precipitation? ☐ YES ☒ NO

Air Temp.: 43.3 °F 6.2 °C Water Temp.: 43.5 °F 6.5 °C ☐ °C ☐ °F

Pool Max. Depth: 16.1 cm Water Level: ☐ FULL ☐ ¾ FULL ☐ ½ FULL ☒ ¼ FULL ☐ < ¼ ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☐ YES ☒ NO

OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults

NOTES: Depth 16.1 cm

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.

A hand-drawn map of a lake on grid paper. The lake is elongated vertically. A line runs horizontally across the upper third of the lake. A line runs diagonally from the upper left to the middle right. A line runs diagonally from the middle left to the lower right. Numbered circles (1-10) are placed within the lake. A circle with 'N' is at the bottom right.

WRNWR

Wood Ark Smith #2

DATE: 4/24/2002

TIME BEGIN: 1000

TIME END: 1025

GRID SPACING IS 2.75 m  
INDICATE NORTH ON MAP

K. Hakkarib

T Goodie

\* INDICATE WITH LINE  
WHEN OBSERVERS SWITCH

[illegible]

LOCALITY: WRNWR VERNAL POOL NAME: Wolf Rock Trail #2

Date: 4/24/2002 Sky Code: 0 Wind Code: 1 Previous Day Precipitation? ☐ YES ☒ NO

Air Temp.: 51°F Water Temp.: 43°F ☐ °C ☒ °F

Pool Max. Depth: 27 cm Water Level: ☒ FULL ☐ ¾ FULL ☐ ½ FULL ☐ ¼ FULL ☐ < ¼ ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☐ YES ☒ NO

OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults
GRFR							1
UNK					200+		

NOTES:

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.

Egg Masses 3/27/02	
Spotted Sal.	Wood Frog
12	74

Egg Masses 4/12/02	
Spotted sal.	Wood Frog
47	6
	4/24/02 S W 0/0

# FOCAL VERNAL POOL LOCATION AND HABITAT DATA SHEET

LOCALITY: Wallkill River NWR VERNAL POOL NAME: Scenic Lakes (North #1)

OBSERVER: K. Holcomb / T. Goodie DATE: 3/27/2002

DETAILED DIRECTIONS TO SITE:

Scenic Lakes Rd from Parking Area #11 Walk North ~ 100 yds.

UTM ZONE: 18 UTM DATUM: NAD 83 UTME: 0535257 UTMN: 4559545 ERROR: +/- 6.2 m

LATITUDE (DDMMSS.SS): 41°11'11.23 LONGITUDE: 74°35'25.05 ELEVATION: 122 ☒ m ☐ ft

POOL MAX. LENGTH: 41.9 m POOL MAX. WIDTH: 16.9 m POOL MAX. DEPTH: 36 cm

POOL PERMANENCY: ☐ temporary (dries annually) ☒ semipermanent (sometimes dries) ☐ permanent (never dries)

POND TYPE (Check either Natural, Beaver-created, Artificial/Man-made, or Unknown):

☒ Natural (e.g., oxbow, vernal pool)

☐ Beaver-created

☐ Artificial/Man-Made - If pool is artificial/man-made, pick best description below:

☐ borrow/gravel pit ☐ roadside ditch ☐ farm pond ☐ impoundment ☐ other: \_\_\_\_\_

☐ Unknown

SITE TYPE: ☐ upland-isolated (not part of larger wetland)

☒ bottomland-isolated (part of a river or lake floodplain)

☐ wetland complex (associated with a larger wetland complex)

FISH PRESENT: ☒ No ☐ Yes If Yes, list Species: \_\_\_\_\_

DISTANCE TO FOREST FROM WATER'S EDGE: 0 ☒ m ☐ ft

DISTANCE TO NEAREST ROAD: 82 ☒ m ☐ ft

ROAD IS: ☒ PAVED ☐ GRAVEL ☐ DIRT

ROAD CONDITIONS AT NIGHT: ☒ Light Traffic (< 10 cars) ☐ Heavy Traffic (≥ 10 cars)

FOR THE FOLLOWING, RANK the amount of pond area in which each type occurs

(does not need to sum to 100%): 0 = 0%, 1 = 1-10%, 2 = 11-25%, 3 = 26-50%, 4 = 51-75%, 5 = 76-100%

AQUATIC SUBSTRATE: Leaf Litter 5 Sticks/Logs 2

AQUATIC VEGETATION: SAV \_\_\_\_\_ Herb \_\_\_\_\_ Emergent 3 Cattail \_\_\_\_\_ Shrub 3 Tree 1 Other \_\_\_\_\_



LAND USE/COVER AROUND VERNAL POOL:

Estimate % of each of the land use/cover categories within 50 m of pool. Estimates should total 100%:

80 % Woodland/Forest

- ☒ Hardwood (> 75% deciduous)  
☐ Softwood (> 75% evergreen)  
☐ Mixed Hardwood/Softwood (< 75% each)

If % woodland/forest is entered, record if canopy cover over the vernal pool is heavy, or moderate:

- ☒ Heavy (> 50% canopy cover of trees/shrubs > 6 ft. tall)  
☐ Moderate (< 50% canopy cover of trees/shrubs < 6 ft. tall)

20% Agriculture/Fields

% Meadow/Marsh

% Residential/Urban/Suburban

% Industrial

% Mining

% Pasture/Rangeland

% Road

% Other: \_\_\_\_\_

NOTES:

This image shows a blank sheet of white paper with horizontal black ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.



LOCALITY: Walk: 11 River NWR VERNAL POOL NAME: Scenic Lakes (North #1)

Date: March 27, 2002 Sky Code: 1 Wind Code: 2 Previous Day Precipitation? ☒ YES ☐ NO

Air Temp.: 48°F 50°F Water Temp.: 52° 48 ☐ °C ☒ °F

Pool Max. Depth: 36 cm Water Level: ☐ FULL ☒  $\frac{1}{4}$  FULL ☐  $\frac{1}{2}$  FULL ☐  $\frac{3}{4}$  FULL ☐  $< \frac{1}{4}$  ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☐ YES ☒ NO

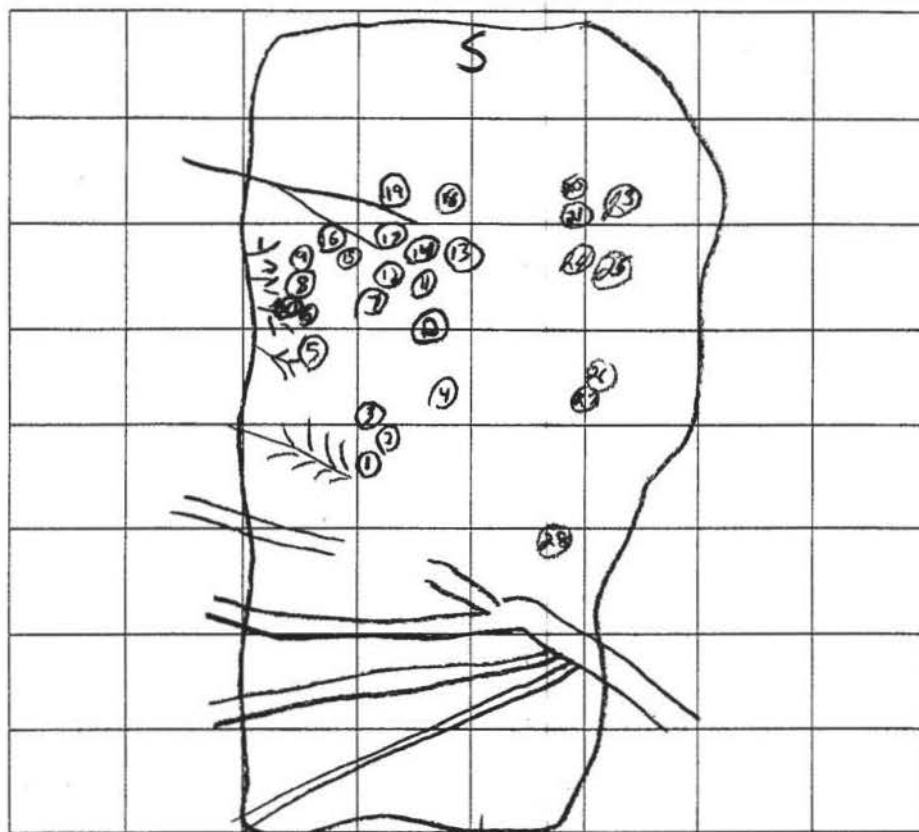
OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults
NSPE	1						
WOFR	3	1					
Spotted sal			2				

NOTES:

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.

# FOCAL VERNAL POOL EGG MASS COUNT DATA SHEET



LOCALITY:

Wallkill River NWR

VERNAL POOL NAME:

Scenic Lakes Rd North #1

DATE: 4/12/2002

TIME BEGIN: 0950-

TIME END: 1105

GRID SPACING IS 5.24 m  
INDICATE NORTH ON MAP

OBSERVER 1

K. Holcomb

OBSERVER 2

T. Goodie

\* INDICATE WITH LINE  
WHEN OBSERVERS SWITCH

Species	# Egg Masses		Dead	Species	# Egg Masses		Dead
	OBS 1	OBS 2			OBS 1	OBS 2	
1 S	2			15 S	1		
2 S	1			16 S	6		
3 S	1			17 S	1		
4 S	2			18 S	1		
5 W	1			19 S	1		
6 W	2			20 S		1	
7 S	8			21 S		1	
8 S	1			22 S		1	
9 S	2			23 W	1		
10 W		1		24 S		1	
11 S	2			25 W		1	
12 S	1			26 S		1	
13 S	8			27 S		2	
14 S	1			28 S		1	

LOCALITY: Wallkill River NWR VERNAL POOL NAME: Sonic Lakes North #1

Date: 4/12/2002 Sky Code: 2 Wind Code: 2 Previous Day Precipitation? ☐ YES ☒ NO

Air Temp.: 48.4 °F Water Temp.: 45.5 °F 7.5 °C ☐ °C ☐ °F

Pool Max. Depth: 35 cm Water Level: ☐ FULL ☐ ¾ FULL ☐ ½ FULL ☒ ¼ FULL ☐ < ¼ ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☐ YES ☒ NO

OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults
NSPE	1						
Unknown					100+		
Bull							1

NOTES: 1 adult Snapping Turtle

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.





LOCALITY: WRNWR VERNAL POOL NAME: Scenic Lakes North #1

Date: 4/24/02 Sky Code: 0 Wind Code: 1 Previous Day Precipitation? ☐ YES ☒ NO

Air Temp.: 45°F 6°C Water Temp.: 42°F 6°C ☐ °C ☐ °F

Pool Max. Depth: 52 cm Water Level: ☒ FULL ☐ ¾ FULL ☐ ½ FULL ☐ ¼ FULL ☐ < ¼ ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☐ YES ☒ NO

OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults
GRFR							2
UNK.					500+		

NOTES: Pool Full - Increased area

Scenic Lakes South #2 GRFR - 1 Ad  
43°F 6°C 64 Max Depth

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.

## PERCENT VERNAL POOLS OCCUPIED DATA SHEET

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Scenic Lakes Rd (North #1)

OBSERVER: K. Holcomb / T. Grodie DATE: 3/27/2002 # of 50 m sections: 2

TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: Scenic Lakes (South #2)

DISTANCE ALONG TRANSECT: 100 m DISTANCE FROM TRANSECT: 25 m BEARING: 272° NW

UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0535689 UTM N: 4559395 ERROR: 5.1 +/-m

LATITUDE (DDMMSS.SS): 41°11'06.35" LONGITUDE: 74°34'22.97" ELEVATION: 135 ☒ m ☐ ft

POOL MAX. LENGTH: 14 m POOL MAX. WIDTH: 9 m POOL MAX. DEPTH: 36 cm

[illegible]

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Scenic Lakes (North #1)

OBSERVER: K. Holcomb / T. Goodie DATE: 3/27/02 # of 50 m sections:           

TRANSECT: N (S) E W NEW VERNAL POOL NAME OR NUMBER: Scenic Lakes (South #3)

DISTANCE ALONG TRANSECT: 100 m DISTANCE FROM TRANSECT: 150 m BEARING: 272° NW

UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0535615 UTM N: 4559380 ERROR: 5.6 +/-m

LATITUDE (DDMMSS.SS): 41°11'05.81" LONGITUDE: 74°34'31.09" ELEVATION: 127 ☒ m ☐ ft

POOL MAX. LENGTH: 60 m POOL MAX. WIDTH: 20 m POOL MAX. DEPTH: 20 cm

[illegible]

## PERCENT VERNAL POOLS OCCUPIED DATA SHEET

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Scenic Lakes (North #1)

OBSERVER: K. Holcomb / T. God'e DATE: 3/27/2002 # of 50 m sections:           

TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: Scenic Lakes (South #4)

DISTANCE ALONG TRANSECT: 100 m DISTANCE FROM TRANSECT: 100 m BEARING: 240 °

UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0535644 UTM N: 4559374 ERROR: 14 +/-m

LATITUDE (DDMMSS.SS): 41°11'05.55" LONGITUDE: 74°34'29.20" ELEVATION: 124 ☒ m ☐ ft

POOL MAX. LENGTH: 8.2 m POOL MAX. WIDTH: 4.8 m POOL MAX. DEPTH: 15 cm

[illegible]

LOCALITY: \_\_\_\_\_ FOCAL VERNAL POOL NAME: \_\_\_\_\_

OBSERVER: \_\_\_\_\_ DATE: \_\_\_\_\_ # of 50 m sections: \_\_\_\_\_

TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: \_\_\_\_\_

DISTANCE ALONG TRANSECT: \_\_\_\_\_ m DISTANCE FROM TRANSECT: \_\_\_\_\_ m BEARING: \_\_\_\_\_ °

UTM ZONE: \_\_\_\_\_ UTM DATUM: NAD 83 UTM E: \_\_\_\_\_ UTM N: \_\_\_\_\_ ERROR: \_\_\_\_\_ +/-m

LATITUDE (DDMMSS.SS): \_\_\_\_\_ LONGITUDE: \_\_\_\_\_ ELEVATION: \_\_\_\_\_ m \_\_\_\_\_ ft

POOL MAX. LENGTH: \_\_\_\_\_ m POOL MAX. WIDTH: \_\_\_\_\_ m POOL MAX. DEPTH: \_\_\_\_\_ cm

[illegible]

4/12/02 Scenic Lakes South #2  
42 cm depth 49.1°F 9.5°C  
1 WFR Egg mass  
5 wk. Frogs  
1 spotted turtle

---

4/12/02 Scenic Lakes South #3  
NSPE call index 2

---

4/12/02 Scenic Lakes #4  
Oiy

---

4/12/2002

JB Rd. #2 Lg. Pool 55cm depth  
low water

WOFR Hatching - 1 Lg mass

Spotted 2





Egg Masses	
Spotted Sal.	Wood Frog
9	76
	4/4/02

Egg Masses	
Spotted Sal.	Wood Frog
14	35
	4/12/02

Egg Masses	
Spotted Salamander	
12	4/24/02

# FOCAL VERNAL POOL LOCATION AND HABITAT DATA SHEET

LOCALITY: Wallkill River NWR VERNAL POOL NAME: Judge Beach #1

OBSERVER: K. Hokomb / T. Goodie DATE: 4/4/2002

DETAILED DIRECTIONS TO SITE:

From Judge Beach Rd turn onto refuge by former barn, travel across rail road bed + turn SW along riparian creek.

UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0534766 UTM N: 4561395 ERROR: +/- 5.8 m

LATITUDE (DDMMSS.SS): 41°12'11.06" LONGITUDE: 74°35'06.72" ELEVATION: 123 ☒ m ☐ ft

POOL MAX. LENGTH: 19.5 m POOL MAX. WIDTH: 9.6 m POOL MAX. DEPTH: 12 cm

POOL PERMANENCY: ☒ temporary (dries annually) ☐ semipermanent (sometimes dries) ☐ permanent (never dries)

POND TYPE (Check either Natural, Beaver-created, Artificial/Man-made, or Unknown):

☒ Natural (e.g., oxbow, vernal pool)

☐ Beaver-created

☐ Artificial/Man-Made - If pool is artificial/man-made, pick best description below:

☐ borrow/gravel pit ☐ roadside ditch ☐ farm pond ☐ impoundment ☐ other: \_\_\_\_\_

☐ Unknown

SITE TYPE: ☐ upland-isolated (not part of larger wetland)

☒ bottomland-isolated (part of a river or lake floodplain)

☐ wetland complex (associated with a larger wetland complex)

FISH PRESENT: ☒ No ☐ Yes If Yes, list Species: \_\_\_\_\_

DISTANCE TO FOREST FROM WATER'S EDGE: 0 ☒ m ☐ ft

DISTANCE TO NEAREST ROAD: 325 ☒ m ☐ ft

ROAD IS: ☒ PAVED ☐ GRAVEL ☐ DIRT

ROAD CONDITIONS AT NIGHT: ☒ Light Traffic (< 10 cars) ☐ Heavy Traffic (≥ 10 cars)

FOR THE FOLLOWING, RANK the amount of pond area in which each type occurs

(does not need to sum to 100%): 0 = 0%, 1 = 1-10%, 2 = 11-25%, 3 = 26-50%, 4 = 51-75%, 5 = 76-100%

AQUATIC SUBSTRATE: Leaf Litter 5 Sticks/Logs 3

AQUATIC VEGETATION: SAV \_\_\_\_\_ Herb \_\_\_\_\_ Emergent \_\_\_\_\_ Cattail \_\_\_\_\_ Shrub 2 Tree 1 Other \_\_\_\_\_



WRNWR

Judge Beach #1

DATE: 4/4/02

TIME BEGIN: 1055

TIME END: 1125

GRID SPACING IS 3 m  
INDICATE NORTH ON MAP

K. Holcomb

T. Goodie

\* INDICATE WITH LINE  
WHEN OBSERVERS SWITCH

[illegible]

LOCALITY: WRNWR VERNAL POOL NAME: Judge Beach #1

Date: 4/4/02 Sky Code: 0 Wind Code: 1 Previous Day Precipitation? ☒ YES ☐ NO

Air Temp.: 47.5°F Water Temp.: 55 51 ☐ °C ☒ °F

Pool Max. Depth: 12 cm Water Level: ☐ FULL ☐ ¾ FULL ☐ ½ FULL ☐ ¼ FULL ☒ < ¼ ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☐ YES ☒ NO

OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults
<u>WOFR</u>	<u>1</u>						

NOTES:

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.



A hand-drawn map on a grid background. The map features a large, irregularly shaped lake. Inside the lake, there is a small cloud-like shape labeled "1-4" and a small circle labeled "5". Above the lake, there is a small oval labeled "N" and a small rectangle labeled "Log".

Wallkill River NW

Judge Beach

DATE: 4/12/2002

TIME BEGIN: 1335

TIME END: 1350

GRID SPACING IS 3 m  
INDICATE NORTH ON MAP

K. Holcomb

T. Goodie

\* INDICATE WITH LINE  
WHEN OBSERVERS SWITCH

[illegible]

LOCALITY: Wallick's River road VERNAL POOL NAME: Judge Beach Rd #1

Date: 4/17/2002 Sky Code: 2 Wind Code: 3 Previous Day Precipitation? ☐ YES ☒ NO

Air Temp.: 60.20°F Water Temp.: 53 ☐ °C ☒ °F

Pool Max. Depth: 6 cm    Water Level: ☐ FULL ☐ ¾ FULL ☐ ½ FULL ☐ ¼ FULL ☒ < ¼ ☐ DRY

Is Visibility Impaired During Egg Mass Counts? ☐ YES ☒ NO

## OTHER AMPHIBIANS, REPTILES, INVERTEBRATES, ETC.:

[illegible]

NOTES: \* All WOFR Masses are Exposed to air on top.

Very little water left in pool

- \* All Spotted Mosses are exposed to air on top

CHORUS CODE	DESCRIPTION
0	No amphibians calling
1	Individuals can be counted, calls not overlapping. Record the number of individuals calling after code separated by hyphen (e.g., 1 - 3)
2	Calls overlap (simultaneous calling), but individuals are distinguishable. Record the number of individuals calling after code separated by hyphen (e.g., 2 - 6)
3	Full chorus, calls continuous and overlapping. Can not distinguish individuals.

## A hand-drawn diagram on a grid. A large, irregular rectangle is drawn with a thick black line. Inside this rectangle, on the right side, there is a small, stylized tree or plant with several branches. To the left of the tree, inside the rectangle, is a small circle with the number '1' inside it. Above the rectangle, outside the grid, is a small circle with the number '2' inside it.

WKNWR

Judge Beach #1

DATE: 4/24/2002

TIME BEGIN: 1050

TIME END: 1105

GRID SPACING IS 3 m  
INDICATE NORTH ON MAP

OBSERVER 1

K. Holcomb

OBSERVER 2

T. Goudie

\* INDICATE WITH LINE  
WHEN OBSERVERS SWITCH

[illegible]





# PERCENT VERNAL POOLS OCCUPIED DATA SHEET

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Judge Beach #1  
 OBSERVER: K. Holcomb / T. Goodie DATE: 3/22/02 # of 50 m sections:       
 TRANSECT: (N) S E W NEW VERNAL POOL NAME OR NUMBER: JB 1-A  
 DISTANCE ALONG TRANSECT:      m DISTANCE FROM TRANSECT:      m BEARING:      °  
 UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 534745 UTM N: 4561528 ERROR: 5.7 +/-m  
 LATITUDE (DDMMSS.SS): 41°12'15.28" LONGITUDE: 74°35'08.15" ELEVATION: 127 ☒ m ☐ ft  
 POOL MAX. LENGTH: 95 m POOL MAX. WIDTH: 21 m POOL MAX. DEPTH: 59 cm

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults
<u>WOFR</u>	<u>2</u>						

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Judge Beach #1  
 OBSERVER: K. Holcomb / T. Goodie DATE: 3/22/02 # of 50 m sections:       
 TRANSECT: (N) S E W NEW VERNAL POOL NAME OR NUMBER: JB 1-B  
 DISTANCE ALONG TRANSECT:      m DISTANCE FROM TRANSECT:      m BEARING:      °  
 UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0534769 UTM N: 4561604 ERROR: 3.8 +/-m  
 LATITUDE (DDMMSS.SS): 41°12'18.23" LONGITUDE: 74°35'07.07" ELEVATION: 121 ☒ m ☐ ft  
 POOL MAX. LENGTH: 28.5 m POOL MAX. WIDTH: 20.5 m POOL MAX. DEPTH: 36 cm

SPECIES	Chorus Code	# Mated Pairs	Spermatophores	# Egg Masses	Tadpoles/Larvae	# Juveniles	# Adults
<u>Spotted Sal</u>							<u>1 Dead</u>
<u>NSPE</u>	<u>3</u>						
<u>WOFR</u>				<u>40 hatching</u>			

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Judge Beach #1  
OBSERVER: K. Holcomb / T. Goodie DATE: 4/4/02 # of 50 m sections:         
TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: JB 1-A  
DISTANCE ALONG TRANSECT:        m DISTANCE FROM TRANSECT:        m BEARING:        °  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 534745 UTM N: 4561528 ERROR: 5.7 +/-m  
LATITUDE (DDMMSS.SS): 41°12'15.28" LONGITUDE: 74°35'08.15" ELEVATION: 127 ☒ m ☐ ft  
POOL MAX. LENGTH: 95 m POOL MAX. WIDTH: 21 m POOL MAX. DEPTH: 59 cm

[illegible]

LOCALITY: Waikiki River NWR FOCAL VERNAL POOL NAME: Judge Ranch #1  
OBSERVER: K. Holcomb / T. Gode DATE: 4/4/02 # of 50 m sections: \_\_\_\_\_  
TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: JB-1-13  
DISTANCE ALONG TRANSECT: \_\_\_\_\_ m DISTANCE FROM TRANSECT: \_\_\_\_\_ m BEARING: \_\_\_\_\_ °  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0534769 UTM N: 4561604 ERROR: 3.8 +/-m  
LATITUDE (DDMMSS.SS): 41°12'18.23" LONGITUDE: 74°35'07.02" ELEVATION: 121 ☒ m ☐ ft  
POOL MAX. LENGTH: 28 m POOL MAX. WIDTH: 20 m POOL MAX. DEPTH: 35 cm

[illegible]

## PERCENT VERNAL POOLS OCCUPIED DATA SHEET

LOCALITY: Wailuku River NWR FOCAL VERNAL POOL NAME: Judge Beach #1  
OBSERVER: H. Holcomb / T. Goodie DATE: 4/12/02 # of 50 m sections:         
TRANSECT: ① S E W NEW VERNAL POOL NAME OR NUMBER: JB 1-A  
DISTANCE ALONG TRANSECT:        m DISTANCE FROM TRANSECT:        m BEARING:        °  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 534745 UTM N: 456528 ERROR: 5.7 +/-m  
LATITUDE (DDMMSS.SS): 41°12'15.28" LONGITUDE: 74°35'08.15" ELEVATION: 127 ☒ m ☐ ft  
POOL MAX. LENGTH: 95 m POOL MAX. WIDTH: 21 m POOL MAX. DEPTH: 58 cm

[illegible]

LOCALITY: Wallkill R.iver NWR FOCAL VERNAL POOL NAME: Judge Beach #1  
OBSERVER: H. Holcomb / T. Goodie DATE: 4/12/02 # of 50 m sections: \_\_\_\_\_  
TRANSECT: N S E W NEW VERNAL POOL NAME OR NUMBER: JB-1-B  
DISTANCE ALONG TRANSECT: \_\_\_\_\_ m DISTANCE FROM TRANSECT: \_\_\_\_\_ m BEARING: \_\_\_\_\_ °  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 05341769 UTM N: 4561604 ERROR: 3.8 +/-m  
LATITUDE (DDMMSS.SS): 41°12'18.23" LONGITUDE: 74°35'07.07" ELEVATION: 121 ☒ m ☐ ft  
POOL MAX. LENGTH: 28 m POOL MAX. WIDTH: 20 m POOL MAX. DEPTH: 32 cm

[illegible]

## PERCENT VERNAL POOLS OCCUPIED DATA SHEET

LOCALITY: W/114.11 River NWR FOCAL VERNAL POOL NAME: Judge Beach #1  
OBSERVER: H. Holcomb / T. Gault DATE: 4/24/02 # of 50 m sections:       
TRANSECT: ④ S E W NEW VERNAL POOL NAME OR NUMBER: JB 1-A  
DISTANCE ALONG TRANSECT:      m DISTANCE FROM TRANSECT:      m BEARING:      °  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 534745 UTM N: 4561528 ERROR: 5.7 +/-m  
LATITUDE (DDMMSS.SS): 41°12'15.28" LONGITUDE: 74°35'08.15" ELEVATION: 127 ☒ m ☐ ft  
POOL MAX. LENGTH: 90 m POOL MAX. WIDTH: 18 m POOL MAX. DEPTH: 20 cm

[illegible]

LOCALITY: Wallkill River NWR FOCAL VERNAL POOL NAME: Judge Beach #1  
OBSERVER: K. Holcomb / T. Gaudie DATE: 4/24/02 # of 50 m sections: \_\_\_\_\_  
TRANSECT: 8 S E W NEW VERNAL POOL NAME OR NUMBER: JB 1-B  
DISTANCE ALONG TRANSECT: \_\_\_\_\_ m DISTANCE FROM TRANSECT: \_\_\_\_\_ m BEARING: \_\_\_\_\_ °  
UTM ZONE: 18 UTM DATUM: NAD 83 UTM E: 0534769 UTM N: 4561604 ERROR: 38 +/-m  
LATITUDE (DDMMSS.SS): 41°12'18.23" LONGITUDE: 74°35'02.07" ELEVATION: 121 ☒ m ☐ ft  
POOL MAX. LENGTH: 27 m POOL MAX. WIDTH: 22 m POOL MAX. DEPTH: 36 cm

[illegible]