

SWARTSWOOD SINKHOLE PONDS

NATURAL AREAS REGISTER SITE SUMMARY

November 11, 1999

County:	Sussex
Municipality:	Stillwater and Hampton Townships
Physiographic Province:	Ridge and Valley
U.S.G.S. Quadrangle:	Newton West
Coordinates:	41 04'20" latitude; 74 48'50" longitude
Acreage:	444
Ownership:	Public/Private
Land Use:	The Register Site encompasses a portion of the boundary of Swartswood State Park. A small area between Newton-Swartswood Road and the park boundary at Spring Lake in the southeastern portion of the Register Site consists of residential developed private land. Park infrastructure is for recreational purposes only. Facilities include several trails, a nature blind at Duck Pond, restrooms, unpaved hiking trails, three small parking areas, a group camping area, and approximately 3,000 linear feet of East Shore Drive (Route 619). Duck Pond Trail is a paved path suitable for hiking, in-line skating, biking, skateboarding, baby strollers, and for users in wheelchairs. Interpretive wayside exhibits along existing trails are planned for installation in the near future. Additional public uses include hiking, horseback riding, nature interpretation, hunting, ice skating, cross country skiing and sledding.

Reason for Inclusion of Area in the Natural Areas Register:

Swartswood Sinkhole Ponds satisfies two of three criteria required for inclusion in the Natural Areas Register (fulfillment of only one standard is sufficient for Register consideration):

1. The site supports a significant viable example of a rare natural community or an extremely high quality representative of other natural communities of the State or nation.

The rare sinkhole pond community type developed in a limestone geology, which exists as bands throughout the Ridge and Valley physiography of this region. The resultant undulating topography is characterized by small sinks and ravines. Although these sinkholes tend to be filled with water during the winter and spring months, the water level slowly falls during the summer resulting in distinct and unique bands of emergent pondshore vegetation. This vegetation zonation along a dynamic gradient of moisture characterizes the limestone sinkhole pond community type, of which there appear to be numerous variants (Walz et al. 1998). The four ponds in the Register Site, Spring Lake, Duck Pond, Frog Pond and Little

Frog Pond, support several distinct limestone sinkhole pondshore communities, as described by Walz (1998). Swartswood Sinkhole Ponds support the largest occurrence of the *Boltonia asteroides* var. *asteroides* – *Mentha arvensis* – *Cyperus strigosus* – *Aster racemosus* dominated variant of the sinkhole pond community (Walz 1998). This community has also been documented as supporting an exceptional array of rare plant species and habitat for rare salamanders (see below). Survey, classification, and establishment of a permanent monitoring program for the entire extent of this diverse community type in New Jersey is the objective of a current study (Breden 1996), and is likely to reveal the true wealth of biodiversity inherent in this community. The portion of the park containing the sinkhole ponds is also reserved primarily for passive recreational activities, including hunting and hiking along interpretive trails.

2. The site is verified as supporting a significant, viable natural occurrence of one or more plant or animal species, or both, determined to be rare, threatened or endangered in the State or nation.

The New Jersey Natural Heritage Database contains documented records for the following rare species in Swartswood Sinkhole Ponds (New Jersey Department of Environmental Protection 1999). Based on the locational precision of the record and the observation date, all of these species are believed to be extant in the Register site.

Scientific Name	Common Name	Status
<i>Ambystoma jeffersonianum</i>	Jefferson's salamander	SD
<i>Ambystoma maculatum</i>	spotted salamander	SD
<i>Aster tradescantii</i>	Tradescant's aster	SC
<i>Boltonia asteroides</i>	aster-like boltonia	SC
<i>Carex viridula</i>	green sedge	SC
<i>Eragrostis frankii</i>	frank's lovegrass	SC
<i>Eurycea longicauda</i> var. <i>longicauda</i>	longtail salamander	ST
<i>Hypericum majus</i>	larger Canadian St. John's-wort	SE
<i>Panicum flexile</i>	wiry panic grass	SE
<i>Ranunculus flabellaris</i>	yellow water crowfoot	SC

Explanation of Status Codes: SE - Listed as State Endangered
 ST - Listed as State Threatened
 SD - Listed as State Declining
 SC - Species of Concern in New Jersey

Preliminary results indicate the following new plant species occurrences within Swartswood Sinkhole Ponds that have not yet been documented in the Natural Heritage Database: *Carex bebbii* (SC), *C. cryptolepis* (SC), *C. hitchcockiana* (SC), *C. retrorsa* (SC), and *C. typhina* (SC) (Kathleen S. Walz pers. comm.).

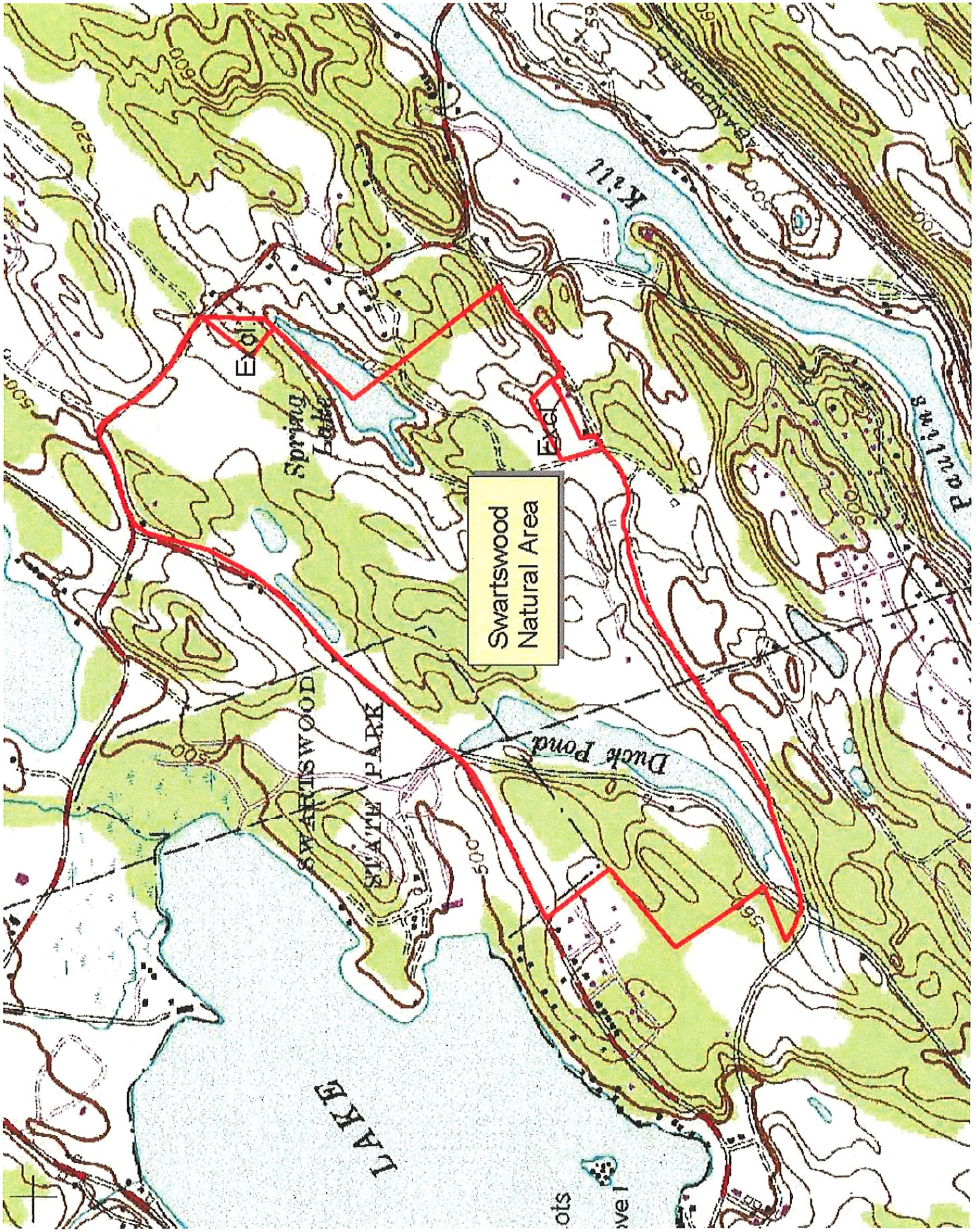
References:

Breden, T.F. 1996. Identification and protection of reference wetland natural communities in New Jersey: Limestone sinkhole pond vegetation communities. State Wetlands Protection Grant Application to the U.S. Environmental Protection Agency.

New Jersey Department of Environmental Protection. 1999. New Jersey Natural Heritage Database, Division of Parks and Forestry, Office of Natural Lands Management, Trenton, NJ.

Walz, K.S. 1998. Internal report on limestone sinkhole ponds prepared for the May 7, 1998 Scorecard Meeting of the New Jersey Natural Heritage Program. New Jersey Department of Environmental Protection, Division of Parks and Forestry, Office of Natural Lands Management, Trenton, NJ.

Walz, K. S., T. F. Breden, R. Dutko, R. Canace, J. Boyle, M. Serfes, R. Witte, W. Honachefsky and J. Kurtz. 1998. Calcareous sinkhole pondshore communities in New Jersey: Identification, classification, and protection. Abstract of poster presentation for the 1998 Natural Areas Association Annual Meeting, Mackinac Island, Michigan.



Swartswood
Natural Area

E 01

E 02

SWARTSWOOD

STATE PARK

Duck Pond

K Kill

Swartswood Lake

LAKE

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