

Species Dossier

State of New York
Endangered Species Working Group
Date compiled:

Common Name: Eastern Spiny Softshell
Scientific Name: *Apalone s. spinifera*
Family: Trionychidae

I. General Status

Current New York Status: Unlisted
Current Federal Status: Unlisted
Recommended New York Status: Special Concern

Current status in surrounding states/provinces:

Connecticut: out of range
Massachusetts: out of range
New Jersey:
Ohio:
Ontario:
Pennsylvania:
Quebec:
Vermont: state threatened

Current Natural Heritage rank (TNC): G5 (Y) S3
global state

Global and North American Ranges:

Western New York to Wisconsin and south to Tennessee River. Disjunct area in Lake Champlain and lower part of the Ottawa River, Canada. Isolated record from east-central New York. Introduced and established in Maurice River system of southern New Jersey.

New York's position within global range:

central ~~peripheral~~ disjunct

II. Historic New York Status and Distribution (>25 years ago)

Provide numbers and/or percent of state occupied and/or number of regions occupied (and basis for estimates), narratives, maps (if available and appropriate), and references/documentation:

Lower Mohawk-Hudson drainage (Albany Co.) and western New York (Allegany River and major tributaries, St. Lawrence River and tributaries, Yates, Saratoga, Monroe and Cattaraugus Counties.

III. Current New York Status and Distribution
 Provide numbers and/or percent of state occupied and/or number of regions occupied (and basis for estimates), narratives, maps (if available and appropriate), and references/documentation:

Western New York and Lake Champlain valley with a disjunct population in the Albany area.

IV. Author's Current Estimate of Population/Habitat Trends

<u>Population Trend</u>	<u>Essential Habitat Trend</u>
Declining	Declining
Stable	Stable
Increasing	Increasing
Unknown	Unknown

V. Biological Description

1. Reproductive information:

Breeds in New York: yes
Confirmed in last 2 years: yes
Confirmed in last 10 years: yes
Confirmed in last 25 years: yes
Confirmed prior to 25 years ago: yes
Unconfirmed:

OR

2. Does not breed in New York; is migrating or seasonal?

OR

3. Species periodically expands or contracts into or out of New York?

Age to sexual maturity: Plastron length: %'s 90-100mm, &'s 180-200mm.

Number of breeding attempts per year: 1 attempt (April-May).

Average number of young per breeding attempt: Typically 12-18 eggs. In Vermont, 13-21 eggs; mean=16.2.

Estimated number of reproductive years per female:

Other narrative on species biology:

The Eastern spiny softshell is a highly aquatic organism found in small and large slow moving streams, permanent and vernal ponds and lakes with sandy or mud bottoms. The normal activity of this species in the northern parts of its range is April through October, although some individuals have been seen in open water as late as December. Winter months are normally spent hibernating in deeper sections of a water source under a covering of sand or mud.

In April, the spiny softshell emerges from the winter sites and migrates to its summering areas (up to two miles in Vermont from upstream wintering areas to Lake Champlain). Males move more extensively than females and are smaller than females (both sexes range widely with peaks occurring in the spring and late summer). *Apalone s. spinifera* is primarily a benthic feeder and spends much time in the aquatic system bottom among submerged brush, logs, fallen trees and other debris as well as in more open areas feeding on a variety of food items. The softshell's diet consists of crayfish, scuds, snails, carrion, fish (of assorted sizes), a variety of insects and vegetable material (*Vallisneria*, acorns and leaves, possibly from accidental ingestion). Feeding is preceded or followed by extensive periods of basking. Preferred basking sites include sand and/or mud beaches in shallow water near such beaches. When suitable substrate is unavailable, the Eastern spiny softshell will use submerged trees, near shore, floating logs, rocks or other floating vegetation as basking sites.

In Vermont, breeding takes place in May and nesting occurs from mid-June to mid-July. Eggs are deposited in sandy areas in flask shaped burrows excavated by the female sometime in early July. The eggs are usually white, brittle and thin shelled structures that are incubated approximately 60-65 days. Hatchlings weigh between 4.5-9.2 grams and have a carapace length ranging from 32.8-43.7mm (carapace width 31.0-39.6mm; plastron length 23.3-31mm). Newly hatched young, from late clutches, may overwinter at the nest site. Growth is rapid initially, but decreases with the age of the animal. In Vermont, the sex ratio of Lake Champlain softshells was approximately 1:1 (there exists strong evidence that sex determination in hatchlings is genetically controlled and not related to incubation temperature). Up river movements back to the winter sites occurred during late August in Vermont. *Apalone s. spinifera* bury themselves in sandy river or lake bottoms during brumation.

In addition to the regular intake of atmospheric air for respiration, the spiny softshell has a specialized aquatic "breathing" method. These animals have a highly vascularized pharyngeal cavity in which water is circulated, and dissolved oxygen is absorbed directly. Anal intake of water for gaseous exchange is also performed, enabling the turtle to remain submerged for significant amounts of time.

VI. Habitat

(describe type, vulnerability, distribution and trend in amount overtime, also estimate future trends - - do you expect habitat to be lost in future? Amount, location, type?)

Within range, the Eastern spiny softshell can be found in small and large slow moving streams, permanent or vernal ponds and lakes containing sandy and/or soft mud bottoms with submerged brush, fallen trees and other debris. Spiny softshells can be found basking on sandy or muddy beaches or in shallow waters near such beaches. Other basking platforms include submerged logs/trees near shore, floating logs or other floating vegetation and rocks.

VII. Discussion of Problems/Threats/Limiting/Overall Vulnerability (of both individuals and essential habitat):

1. Destruction or alteration of habitat (hibernation, basking, and nest sites) through development of beach and water frontage and/or channel dredging.
2. Over collecting or hunting for food/sport.
3. Mechanical weed harvesting.
4. Accidental catching by fishermen (anglers).
5. Vandalism (death and injury caused by stone-throwing children).

VIII. Additional Study, Documentation, Research or Management Needed:

1. Radio telemetry studies to document spatial biology, seasonal movements and habitat use.
2. Population density estimates and long term trends.
3. Population age and sex structure as well as age specific survivorship.
4. Intensive surveys into historic and potential turtle sites.

IX. Prognosis for Recovery:

Good, if critical areas are identified and protected. There is also a need for education, particularly of children, so that needless harming or killing of individuals is reduced.

X. Documentation/References:
(also list or attach pertinent references, survey documents, studies, etc.)

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14. New York Natural Heritage Program Biological Conservation Data System/New York State Department of Environmental Conservation. October 21, 1991. Summation of Natural Heritage ranks for amphibians and reptiles.

15. Pritchard, P.C.H. 1979. Encyclopedia of Turtles. T.F.H. Publications, Inc. Ltd., Neptune, NJ.
16. Stewart, M.M. 1961. An Ecological Survey of Amphibians, Reptiles and Mammals of Allegany Indian Reservation and Vicinity. New York State Museum and Science Service Vol. 383: 62-88.
17. Vogt, R.C. 1982. Genetic Sex Determination in the Spiny Softshell *Trionyx spiniferus* (Testudines: Trionychidae). Copeia No. 3: 699-700.
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19. Williams, T.A., J.L. Christiansen 1981. The Niches of Two Sympatric Softshell Turtles, *Trionyx muticus* and *Trionyx spiniferus*, in Iowa. Journal of Herpetology 15 (3): 303-308.

XI. Experts Consulted/Reviewers of Dossier:

1. Jerry Czech, Ecologist, Cumming Nature Center, Naples, NY 14512. (716) 374-6160.
2. Terry Moore, New York State Department of Environmental Conservation, Olean Sub-Office, 128 South Street, Olean, NY 14760.

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Preparer's Status Recommendation:

Endangered
Threatened
Special Concern
Status Unknown
Status Secure
(no listing)