Species Status Assessment

Class: Reptilia
Family: Phrynosomatidae
Scientific Name: *Sceloporus undulatus*
Common Name: Eastern Fence Lizard

Species synopsis:

The eastern fence lizard occupies open rocky areas and talus slopes with a southern exposure. Its distribution is widespread across much of the southern United States, but its status is poorly understood. The fence lizard's overall occurrence at the northern edge of the range is spotty and there is evidence of decline (Brittingham et al. 2005). A population in extreme southern New York is the northern extent of the distribution; because of its rarity in New York it is state-listed as threatened. As an open-area species, the fence lizard is susceptible to habitat loss through succession.

I. Status

a. Current and Legal Protected Status

i. Federal Not Listed **Candidate?** No

ii. New York Threatened; SGCN

b. Natural Heritage Program Rank

i. Global G5

ii. New York S1 **Tracked by NYNHP?** Yes

Other Rank:
Northeast Partners in Amphibian and Reptile Conservation (NEPARC) – Moderate Concern
IUCN – Least Concern

Status Discussion:
The eastern fence lizard is a southern species that reaches its northern extent in a small area of extreme southeast New York. In New York it is listed as threatened because of its rarity. The Pennsylvania Heritage Program ranked the species as Vulnerable. Elsewhere in the range, fence lizards are abundant and their conservation status is secure. NEPARC (2010) lists eastern fence lizard as a Species of Moderate Concern because more than 25% of northeastern states list it as SGCN.

II. Abundance and Distribution Trends

a. North America

i. Abundance

____ declining ____increasing __X__ stable ____unknown

ii. Distribution:

____ declining ____increasing __X__ stable ____unknown
Time frame considered: ____Not Specified_____

b. Regional

i. Abundance

__X__ declining ____increasing ____stable _____unknown

ii. Distribution:

__X__ declining ____increasing ____stable _____unknown

Regional Unit Considered: ____northern edge of range in Northeast_____
Time Frame Considered: _____Not Specified_____

c. Adjacent States and Provinces

CONNECTICUT **Not Present __X___** **No data _____**

MASSACHUSETTS **Not Present __X___** **No data _____**

ONTARIO **Not Present __X____** **No data _____**

QUEBEC **Not Present __X____** **No data _____**

VERMONT **Not Present __X____** **No data _____**

NEW JERSEY **Not Present _____** **No data _____**

i. Abundance

____ declining ____ increasing __X__ stable ____unknown

ii. Distribution:

____ declining ____ increasing __X__ stable ____unknown

Time frame considered: __Not Specified_____
Listing Status: _____Not Listed_____ SGCN? __No____

PENNSYLVANIA **Not Present _____** **No data _____**

i. Abundance

__X__ declining ____increasing ____stable ____ unknown

ii. Distribution:

__X__ declining ____increasing ____stable ____ unknown

Time frame considered: __"evidence of decline" Not Specified_____
Listing Status: _____Not Listed_____ SGCN? __Yes____

d. NEW YORK **No data _____**

i. Abundance

____ declining ____ increasing ____ stable __X__ unknown

ii. Distribution:

____ declining ____ increasing ____ stable __X__ unknown

Time frame considered: SWAP indicates decreasing trend; Atlas has documented new populations

Monitoring in New York.

There are currently no monitoring efforts for fence lizards.

The NY Amphibian and Reptile Atlas (Herp Atlas) was conducted in 1990-99. The Herp Atlas database also includes historic records from prior to 1990; these records are primarily a compilation of museum records and researchers' field notes.

Trends Discussion:

The NY CWCS indicates a decreasing trend for fence lizard, but the NY Natural Heritage Program states that five extant populations appear to be stable, though there may be evidence of decline in one of them in recent years (NYNHP 2011). The NY Amphibian and Reptile Atlas identified one new area since the survey period ended in 1999, and there are a total of six survey quads where the species occurs.

Some of the records in the Herp Atlas likely represent introduced lizards, including those in eastern Westchester County (individuals may not be there anymore) and in Brooklyn (in a backyard). The Staten Island population is recognized as still extant and it is well documented that it was introduced. Natural populations exist in 5 locations in two topo quads (West Pit and Peekskill). The species has disappeared from the west side of the Hudson River (e. g., Bear Mountain, Fort Montgomery, as far as we know; J. Jaycox, personal communication).

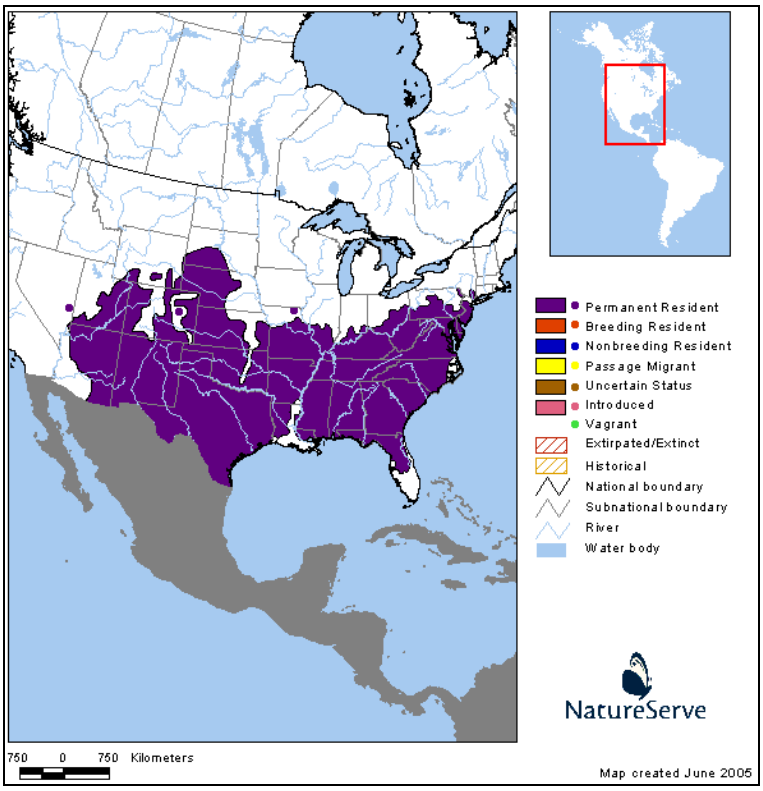

Figure 1: Distribution of fence lizard in North America (NatureServe 2013).

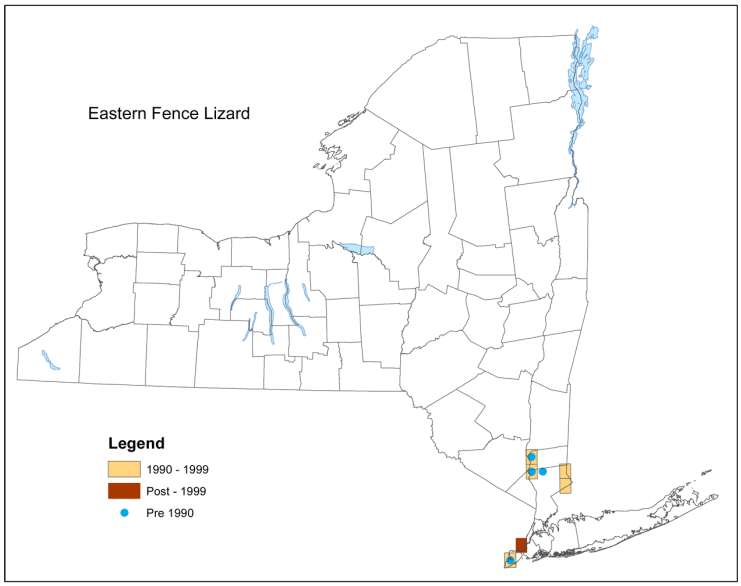

Figure 2: Current and historic distribution of eastern fence lizard in New York (New York Amphibian and Reptile database, NYSDEC).

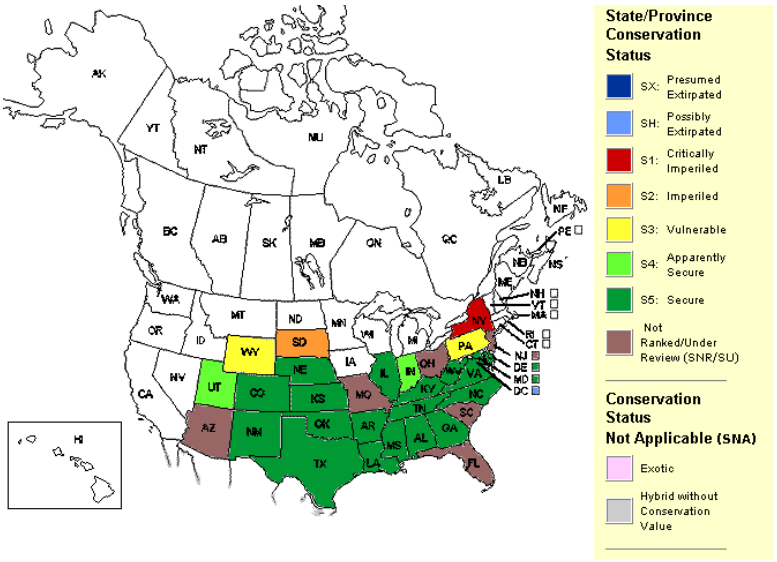

Figure 3: Conservation status of fence lizard in the United States (NatureServe 2012)

III. New York Rarity, if known:

Historic	# of Animals	# of Locations	% of State
prior to 1970	_____	_____	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	4	_____

Details of historic occurrence:

The NY Natural Heritage Program (2011) reports 7 naturally occurring populations, 5 of which are extant. The NY Amphibian and Reptile Atlas includes historical records (pre-1990) in four survey quads, three of which were verified during surveys in 1990-99.

Current	# of Animals	# of Locations	% of State
	_____	6	_____

Details of current occurrence:

The fence lizard occurs in the extreme southeastern portion of the state, occurring in isolated small populations near Peekskill, Coldspring, and Fishkill, as well as on Staten Island, where the species was introduced in 1942 with the release of 29 individuals. It has never been documented on Long Island (NYSDEC 1993).

The NY Amphibian and Reptile Atlas (1990-99) documented fence lizards in a total of five survey quads, including three of the four historical locations. One additional survey quad was added after 1999, at Clay Pit Ponds State Park on Staten Island.

New York's Contribution to Species North American Range:

% of NA Range in New York	Classification of New York Range
____ 100 (endemic)	**____ Core**
____ 76-99	**__X__ Peripheral**
____ 51-75	**____ Disjunct**
____ 26-50	**Distance to core population:**
__X__ 1-25	**_____**

IV. Primary Habitat or Community Type:

1. Rocky Outcrop

2. Cliff and Talus

3. Oak-Pine Forest

4. Oak Forest

5. Pine Barrens

Habitat or Community Type Trend in New York:

____ Declining __X__ Stable ____ Increasing ____Unknown

Time frame of decline/increase: _____

Habitat Specialist? __X__ Yes _____ No

Indicator Species? _____ Yes __X__ No

Habitat Discussion:

From Gibbs et al. (2007): Fence lizards occur in dry open woodlands with lots of sunlight, and are more abundant on south-facing hillsides. The availability of cover objects such as fallen logs, leaf litter, rocks, stumps, and brush piles is an important component of suitable habitat. Across the range, pine-dominated forests are most commonly used.

In Westchester and Putnam counties in New York, fence lizard populations are found in open areas of oak-hickory-ash forest with blueberry, laurel, scrub oak and pine with open rock faces or talus. Hibernation occurs in crevices under or between rocks, in rotting logs or stumps, or within burrows (NYSDEC 1993). The introduced population on Staten Island occupies sandy openings and pine woods within post oak-blackjack oak barren communities (NYNHP 2011).

V. New York Species Demographics and Life History

__X__ Breeder in New York

__X__ Summer Resident

__X__ Winter Resident

_____ Anadromous

_____ Non-breeder in New York

_____ Summer Resident

_____ Winter Resident

_____ Catadromous

_____ Migratory only

_____Unknown

Species Demographics and Life History Discussion:

From Gibbs et al. (2007): Eastern fence lizards breed during several weeks shortly after emergence from hibernation, which occurs in late March. Males have larger territories than females, and several females may have home ranges within the territory of a male. A couple months after mating occurs, females lay 4 to 17 eggs in a small cavity that they excavate in rotting logs or moist soil. The eggs hatch in 10 to 12 weeks during August or early September. Sexual maturity is attained after the second hibernation and the life span is four years or more (NYSDEC 1993).

Fence lizards are active only during the day. Individuals return to hibernation in early November.

VI. Threats:

Known threats include loss of natural areas to agriculture and to the development of urban areas, as well as fragmentation from roads. Because this species requires open areas, natural succession can reduce the amount of available habitat. The removal of cover objects including shoreline debris and loose rocks makes habitat unsuitable. This species is collected for the pet trade and is a common prey item for human commensal predators including raccoons and feral cats. Lizards are susceptible to contaminants (NYSDEC 2005) and may serve as a bioindicator because of they are insectivores (Campbell and Campbell 2000).

A few populations occur within New York park system and thus may be subjected to disturbance from hikers, despite protection from development. Fence lizards are subject to some degree of illegal collecting (NYNHP 2011).

Fence lizard was classified as "presumably stable" in regard to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program (Schlesinger et al. 2011).

Are there regulatory mechanisms that protect the species or its habitat in New York?

_____ No ____ Unknown

__X__ Yes

The fence lizard is listed as a threatened species in New York and is protected by Environmental Conservation Law (ECL) section 11-0535 and the New York Code of Rules and Regulations (6 NYCRR Part 182). A permit is required for any proposed project that may result in a take of a species listed as Threatened or Endangered, including, but not limited to, actions that may kill or harm individual animals or result in the adverse modification, degradation or destruction of habitat occupied by the listed species.

In 2006, the State of New York adopted legislation (ECL section 11-0107 sub 2) that gave all native frogs, turtles, snakes, lizards and salamanders legal protection as game species, with very few open to harvest. The legislation also outlaws the sale of any native species of herpetofauna regardless of its origin.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for lizards, including fence lizard. Conservation actions following IUCN taxonomy are categorized in the table.

Easement acquisition:

___ Secure habitats critical to species survival by acquisition of conservation easements, or by other land protection mechanisms.

Habitat management:

___ Manage vegetative succession or other factors which are determined to be detrimental to habitat suitability in areas occupied by New York's resident lizard species.

Habitat research:

____ Develop standardized habitat survey protocols, and implement survey protocols at all known and potentially suitable sites, to document the character, quality and extent of occupied habitat.

Life history research:

____ Document life history parameters specific to New York populations of the species, including age and sex ratios, longevity, age at sexual maturity, survivorship of young, predator-prey relationships, and habitat requirements.

Modify regulation:

____ Adopt into New York's Environmental Conservation Law provisions which designate fence lizard, coal skink and common five-lined skink as protected small game species.

Other action:

____ Enhance law enforcement to limit specimen collection.

____ Enhance regulation and law enforcement to limit specimen collection.

Population monitoring:

____ Conduct periodic re-survey of known sites of species occurrence, in order to detect population trends.

Statewide baseline survey:

____ Develop population survey protocols and implement protocols at known and potentially suitable sites to determine the extent of occupied habitat in New York.

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Law/Policy	Legislation
Law/Policy	Compliance & Enforcement

VII. References

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Date last revised: September 6, 2013