

Puritan Tiger Beetle

Cicindela puritana

Federal Listing	T
State Listing	E
Global Rank	G1G2
State Rank	SH
Regional Status	Very High

Justification (Reason for Concern in NH)

The Puritan Tiger Beetle is a federally-threatened species that now occurs in only two areas: Chesapeake Bay and the lower Connecticut River. It has declined considerably and now occupies a fraction of its former range, where it is threatened by habitat loss and degradation, flooding, and human disturbance.

Distribution

There are two distinct populations of Puritan Tiger Beetles, one along the Connecticut River in Massachusetts and Connecticut and the other along Chesapeake Bay in Maryland (USFWS 1993, Omland 2002, Pearson et al. 2007). Along the Connecticut, the species was historically known from 11 sites between Cromwell, CT and Claremont, NH (Dunn 1981, USFWS 1993). The upper Connecticut River populations became extirpated in the early 1900s due to dam construction and riverbank stabilization (USFWS 1993). Only two Connecticut River populations remain, one near Hadley, Massachusetts and one in Cromwell, Connecticut (USFWS 1993, Omland 2002), with the former population only maintained through translocations from the latter (S. von Oettingen, USFWS, pers. comm.). In New Hampshire, Puritan Tiger Beetles were historically known from the Connecticut River in Claremont and Charlestown, but have not been observed in the state since 1939 (Dunn 1981).

Habitat

Puritan tiger beetles use different habitats in the two parts of its range. Along the Connecticut River occurs on sandy riverine beaches (including islands), where larvae burrow between sparse herbaceous vegetation (20-30% cover) in fine to medium sand particles (0.125-0.5 mm) at the upper margins of sandy beaches (Omland 2002). Along Chesapeake Bay in Maryland, larvae burrow in long, high, sandy, and non- vegetated bluff faces (Omland 2002, Pearson et al. 2007).

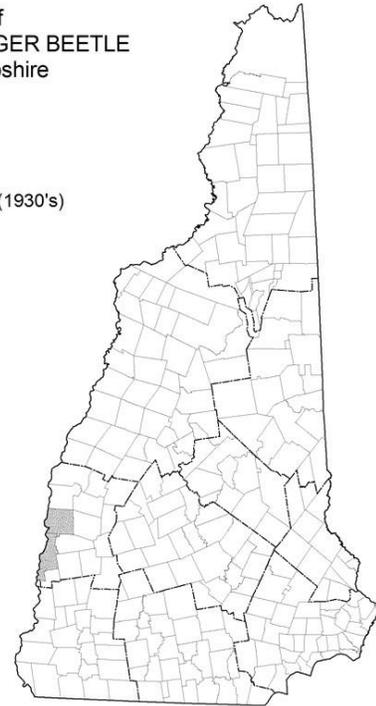
Appendix A: Insects

NH Wildlife Action Plan Habitats

- Large Warmwater Rivers

Distribution of
PURITAN TIGER BEETLE
in New Hampshire

Historic (1930's)



Distribution Map

Current Species and Habitat Condition in New Hampshire

The Connecticut River population is smaller than that along Chesapeake Bay, and most of the former is at a single site in Connecticut. Numbers at the smaller site in Massachusetts are in decline, and the species persists there only through translocations from Connecticut. The species no longer occurs at nine other sites from CT to NH.

Population Management Status

No management in NH. The Massachusetts' population is subject to high human disturbance, and active areas are indicated by signage. There have also been recent attempts to supplement this population with beetles translocated from Connecticut.

Regulatory Protection (for explanations, see Appendix I)

- Federal Endangered Species Act
- Endangered Species Conservation Act (RSA 212-A)
- Rivers Mngmt and Protection Program - NHDES

Quality of Habitat

Species is absent from the two known historic sites in NH.

Appendix A: Insects

Habitat Protection Status

Barring specific details on the historic NH sites, it is not possible to determine what level of protection, if any, they are subject to.

Habitat Management Status

Unknown, pending identification of historic sites.

Threats to this Species or Habitat in NH

Threat rankings were calculated by groups of taxonomic or habitat experts using a multistep process (details in Chapter 4). Each threat was ranked for these factors: Spatial Extent, Severity, Immediacy, Certainty, and Reversibility (ability to address the threat). These combined scores produced one overall threat score. Only threats that received a "medium" or "high" score have accompanying text in this profile. Threats that have a low spatial extent, are unlikely to occur in the next ten years, or there is uncertainty in the data will be ranked lower due to these factors.

Habitat degradation from bank stabilization and associated loss of beach habitat (Threat Rank: Medium)

Bank stabilization and armoring can increase erosion in non-stabilized river sections (through changes in flow patterns) and reduce sediment inputs into rivers that are the source of deposition at downstream locations.

List of Lower Ranking Threats:

Habitat conversion and degradation from water management that causes erosion and excessive flooding

Mortality from recreational activity that tramples larval burrows

Actions to benefit this Species or Habitat in NH

Reintroduction Feasibility Research

Objective:

Determine the suitability of areas along the Connecticut River in NH and VT for establishment of a new population of Puritan Tiger Beetles

General Strategy:

Collect data on habitat conditions, including flood regime, erosional patterns, and substrate composition that could inform selection of sites suitable for future attempts at translocation of individuals from Connecticut.

Political Location:

Watershed Location:

References, Data Sources and Authors

Data Sources

Sources of information include the species recovery plan, tiger beetle identification guides, peer-reviewed literature, field surveys, and technical reports. Tiger beetle field guides, fact sheets from USFWS and Connecticut DEEP.

Data Quality

The life history and habitat requirements of puritan tiger beetles are well documented, although most sources are over 10 years old. Current locations of puritan tiger beetles are well known, but historic New England locations are poorly documented. Dispersal patterns are not well known and need further research. None for NH.

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Literature

Dunn, G.A. 1981. Tiger beetles of New Hampshire. *Cicindela* 13: 1-28.

Omland, K.S. 2002. Larval habitat and reintroduction site selection for *Cicindela puritana* in Connecticut. *Northeastern Naturalist* 9: 433-450.

Pearson, D.L., C.B. Knisley, and C.J. Kazilek. 2006. A field guide to the tiger beetles of the United States and Canada. Oxford University Press, New York.

U.S. Fish and Wildlife Service. 1993. Puritan Tiger Beetle (*Cicindela puritana* G. Horn) Recovery Plan. Hadley, Massachusetts.