

Natural Heritage & Endangered Species Program (NHESP)

- Established in 1978 - Part of the Massachusetts Division of Fisheries & Wildlife since 1983
- Protection of the state's native biological diversity
- Highest priority: state-listed rare species



Hentz's Redbelly Tiger Beetle
Threatened

Rare Species

- 176 animals
- 259 plants

Species officially listed as:

- Endangered
- Threatened
- Special Concern



Lesser Snakeroot
Endangered

What is a “State-listed Species”?

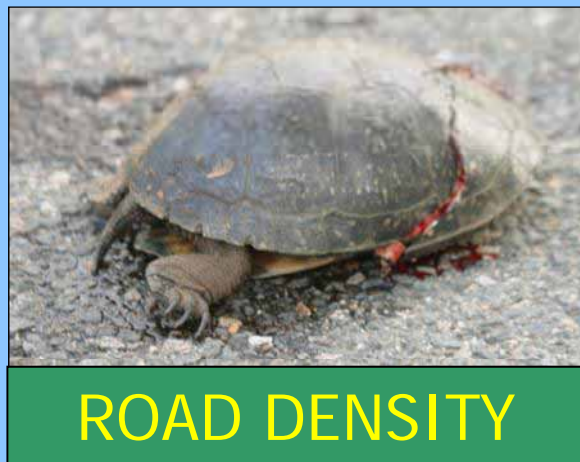
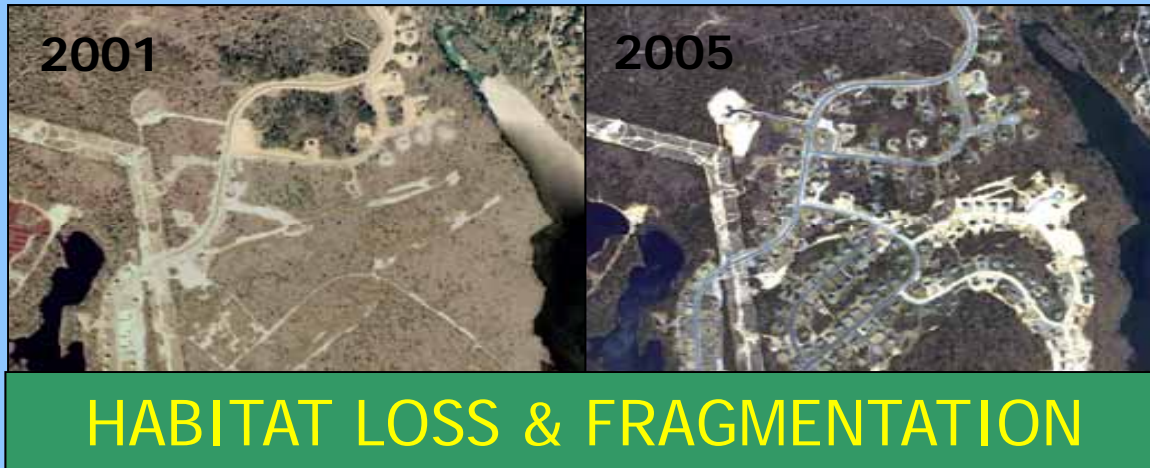
A species determined to be “Endangered”, “Threatened”, or “Special Concern” under the Massachusetts Endangered Species Act (MESA)

Based on combination of factors:

- reproductive and population status and trends
- whether species is native or introduced
- vulnerability caused by threats and specialization
- restricted distribution



Successful conservation efforts must address threats to rare species & their habitats



NHESP Conservation Tools: Land Protection

- Plan and select land for protection by the Division of Fisheries & Wildlife
- Advise Conservation Partners, Towns, etc.

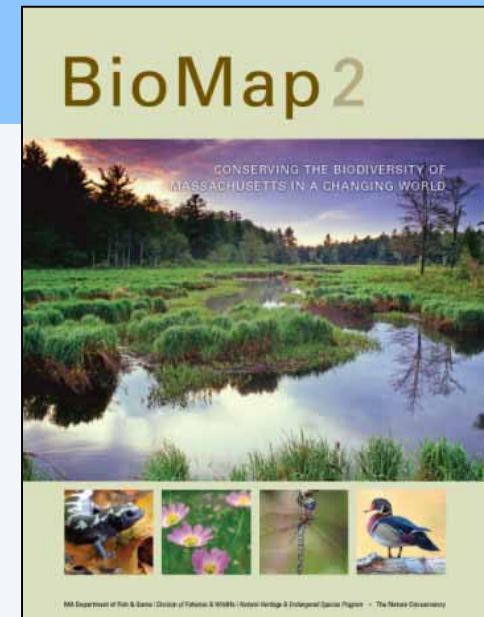
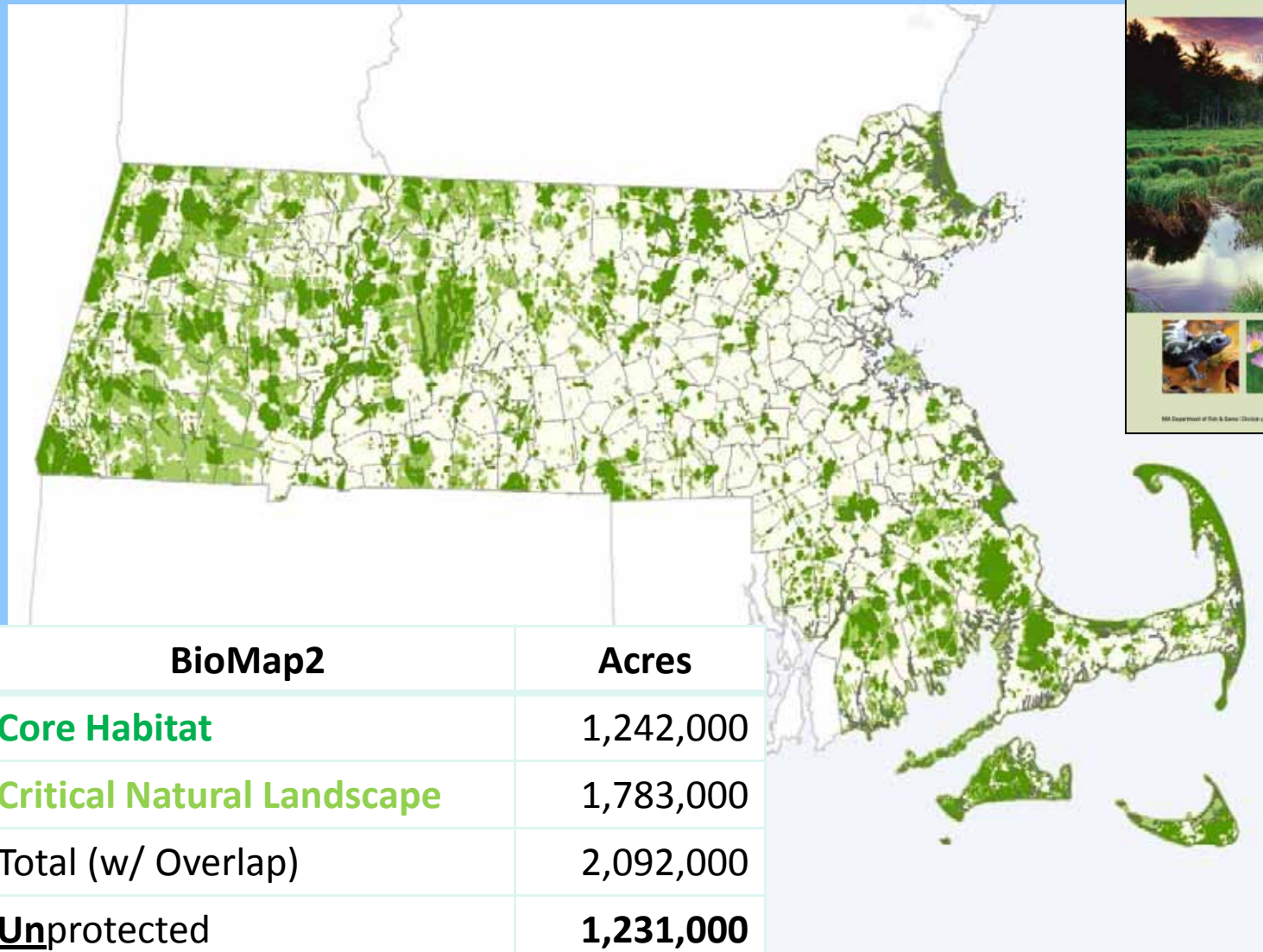


NHESP Conservation Tools: Habitat Management & Ecological Restoration

- Prescribed burning of fire-adapted habitats
- Invasive exotic plant removal



NHESP Conservation Tools: Education

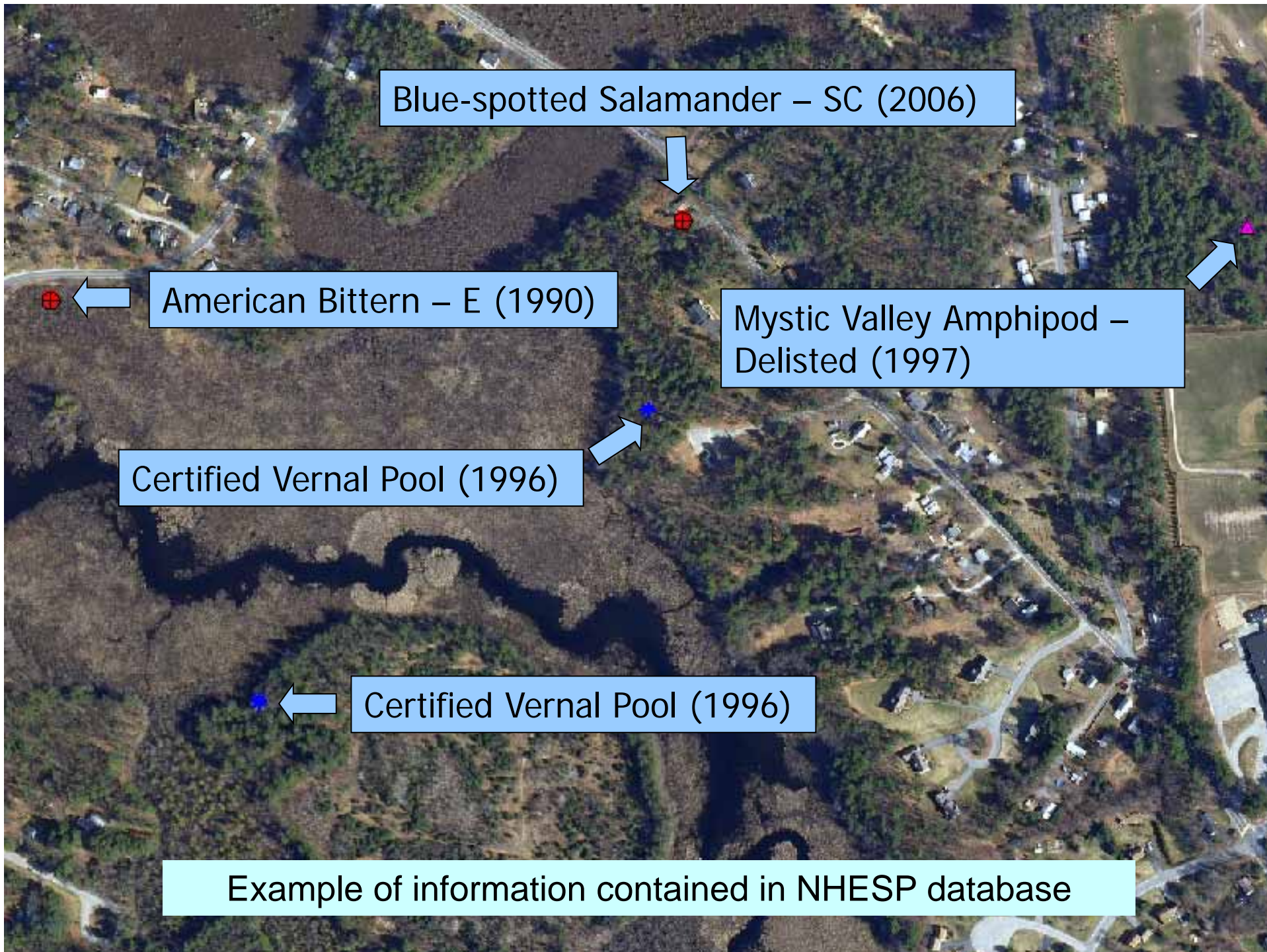


| BioMap2 | Acres |
|-----------------------------------|------------------|
| Core Habitat | 1,242,000 |
| Critical Natural Landscape | 1,783,000 |
| Total (w/ Overlap) | 2,092,000 |
| <u>Un</u>protected | 1,231,000 |

NHESP Conservation Tools: Data Management & Analysis

- Track current and historical observations of state-listed species
- Maintain information on exemplary natural communities
- Maintain information on certified vernal pools
- Database contains over 18,000 geographically-referenced records





Blue-spotted Salamander – SC (2006)

American Bittern – E (1990)

Mystic Valley Amphipod –
Delisted (1997)

Certified Vernal Pool (1996)

Certified Vernal Pool (1996)

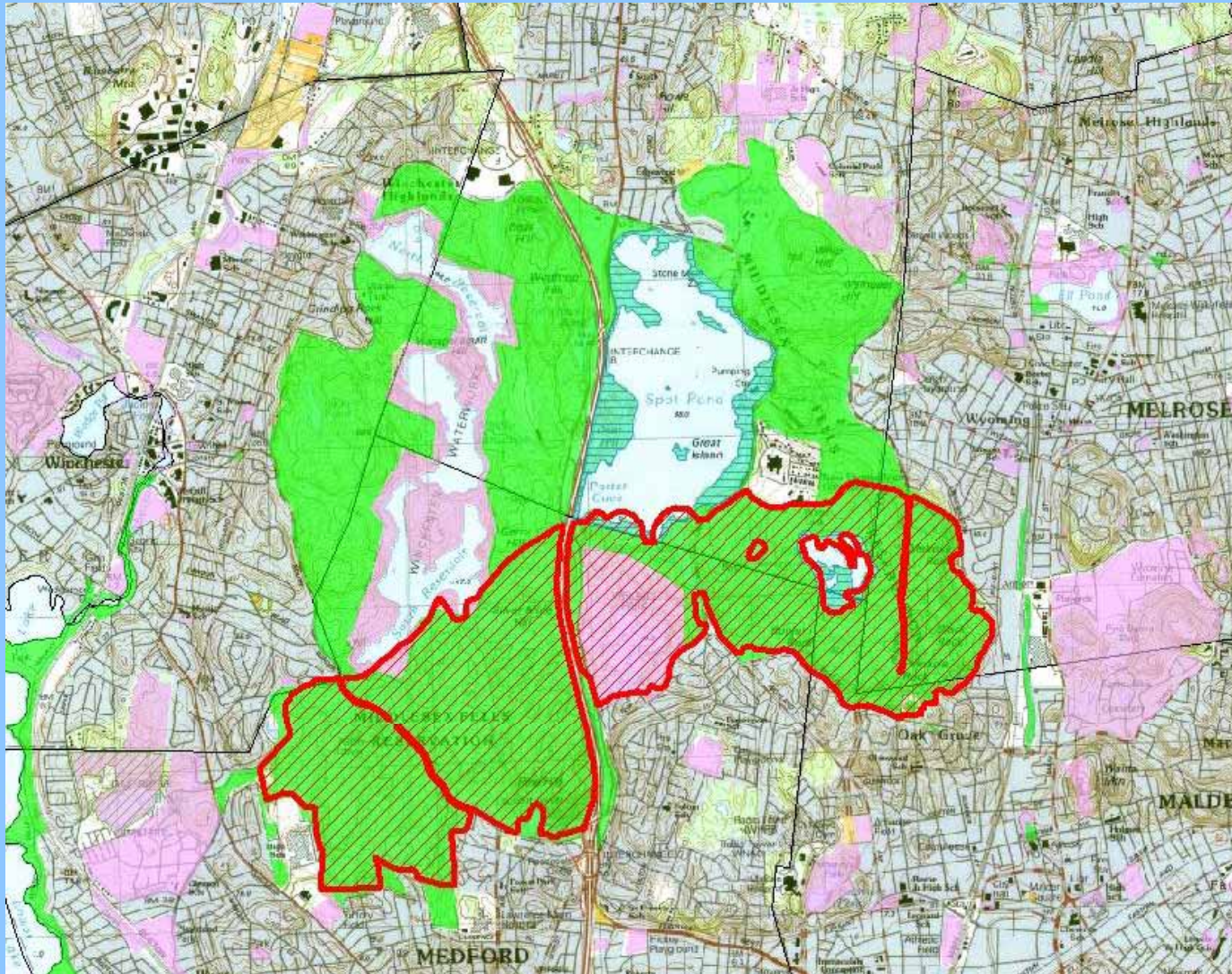
Example of information contained in NHESP database

Rare Species at the Middlesex Fells

- Lesser Snakeroot (a plant) – Endangered
- Name not released (an insect) – Endangered
- Hentz's Redbelly Tiger Beetle – Threatened
- Large-bracted Tick-trefoil (a plant) – Threatened
- Orange Sallow Moth – Threatened
- Frosted Elfin (a butterfly) – Special Concern
- American Clam Shrimp – Special Concern
- Oak Hairstreak (a butterfly) – Special Concern
- Purple Tiger Beetle – Special Concern

- Also possible, but not yet confirmed:
 - Lion's Foot (a plant) - Endangered

Priority Habitat at the Fells



Rare Plants of the Fells



Lesser Snakeroot
Endangered



Large-bracted Tick-Trefoil
Threatened



Lion's Foot
Endangered

Rare Tiger Beetles of the Fells



Hentz's Redbelly Tiger Beetle
Threatened



Purple Tiger Beetle
Special Concern

Rare Moths & Butterflies of the Fells



Orange Sallow Moth - Threatened

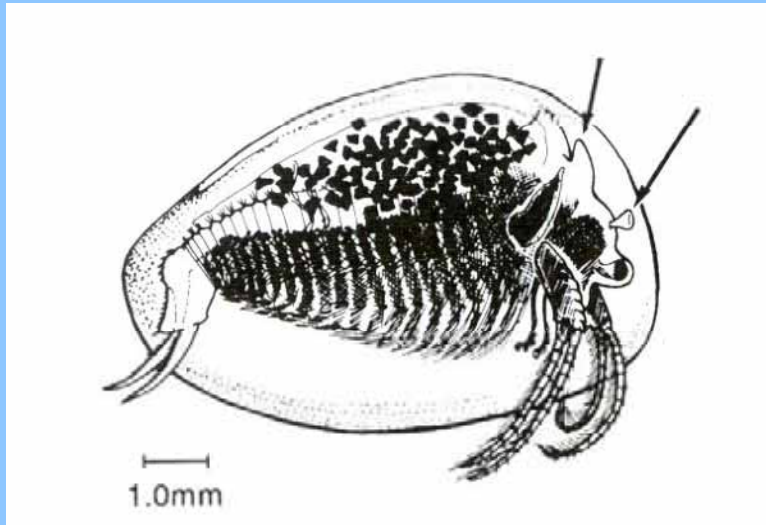


Frosted Elfin – Special Concern

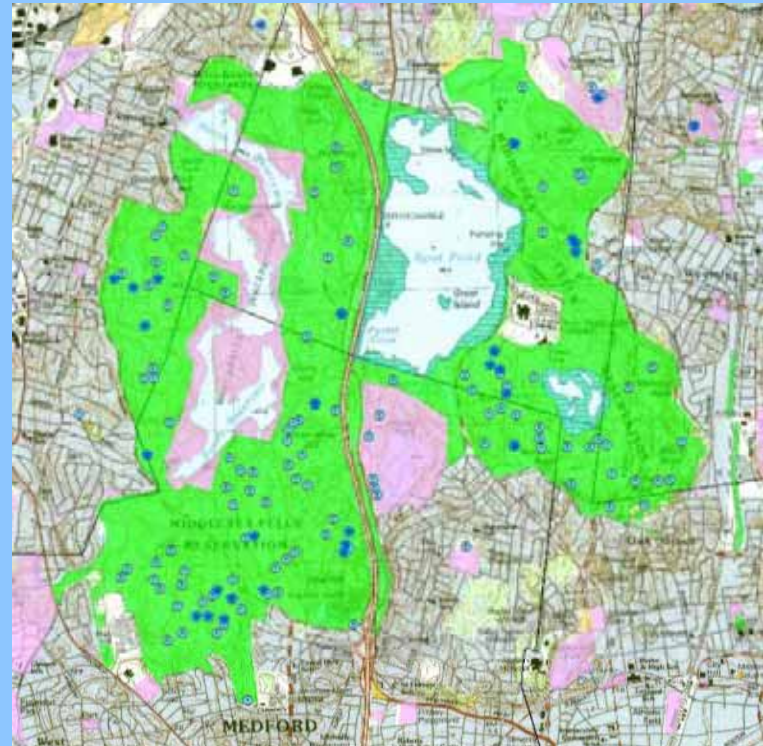


Oak Hairstreak – Special Concern

American Clam Shrimp



Lives in vernal pools
10 mm long (less than a half inch)



Potential and Certified Vernal Pools
In the Fells.....

Any Questions?

