

- c) Diseased function(s):
 - (i) Tissue functions initially affected: :
 - (ii) Potential impact on whole Tree functioning:

- (iii) Potential impact on forest functioning:

2. Primary stress(es) [pathogen(s)]:

- a) Abiotic factor(s) &/or Latin name(s): *Lymantria dispar*
 - (i) **Introduced species**
 - (a) **Native to Asia**
 - (b) **Brought to Boston 1869 for silk production; moths escaped**
 - (c) **First outbreak 1889**

b) Abiotic factor(s): **Thinning Shock**

c) Abiotic factor(s) &/or Latin name(s): *Armillaria spp.*

3. Environment:

C. Development - Interaction of disease triangle over time.

1. Predisposing factors:

a) Degree of tree adaptations to stress and environment.

- b) Degree of stress
 - (i) Life cycle:

- (ii) Natural enemies
 - (a) Predators – mice

- (b) More egg masses survive - release phase

(c) Fungal pathogen - *Entomophaga maimaiga*

2. Inciting conditions for disease:

3. Contributing factors: Factors detrimentally affecting the tree only after it has become diseased. **Harvesting and *Armillaria* root disease.**

a) Harvesting: Thinning shock

b) *Armillaria* root disease

IV. Recommendations.

A. Preemptive:

1. What can increase tree resistance: Maintain vigorous oaks

2. What else can decrease stress(es) (pathogen(s)): Natural enemies

B. Monitor and survey.

1. Pheromone traps:

2. Egg mass counts

3. 3-4 years for population to build.

C. Reactive:

1. What can increase tree resistance:

2. What else can decrease stress(es) (pathogen(s)):

D. Feasibility of option(s):

1. Economic: cost vs. value.

2. Ecological: Influence on other species in forest.

3. Political: Laws and regulations.