Tree Pests and Disease

## Outline for Health Management Plan: American elm.

Edmonds p. 358-362
Dutch Elm Disease: http://na.fs.fed.us/spfo/pubs/howtos/ht_ded/ht_ded.htm
DED and Phloem Necrosis: http://na.fs.fed.us/spfo/pubs/howtos/ht_dednecrosis/ht_dednecrosis.htm
How to Prune: http://na.fs.fed.us/spfo/pubs/howtos/ht_save/ht_save.htm

I. Consider forest management objectives:

II. Tree species adaptations. **American elm (*Ulmus americana*).**

*A.* *Site.*

1. Soils

2. Seedling establishment.

3. Competitors.

*B.* *Climate.*

*C.* ***Excellent shade tree.***

III. Name of Disease Complex: **Dutch elm disease**

*A. Components.*

1. What is Diseased in Trees, Plants:

a) Susceptible species: **American elm.**

b) Symptom(s): **Vascular wilt disease.**

c) Diseased function(s):

(i) Tissue functions initially affected:

(ii) Potential impact on whole tree functioning:

(iii) **Wilting also associated with:**

(iv) Potential impact on forest.

d) Alternate hosts if needed:

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

   a) Latin name(s):

   b) Signs:

3. Environment.

*B. Development - Interaction of disease triangle over time.*

1. Predisposing factors: What makes disease possible.

   a) Degree of tree adaptations to stress and environment:

      (i) **First introduced species (*O. ulmi*).**

(ii) **Aggressive strains/species.**

(iii) **Ring porous wood.**

**(iv) Tree Age:**

b) Degree of stress: Life cycles and mechanisms:

2. Inciting factor for disease:

3. Contributing factors: **Not important.**

*C. Control options:*

1. Preemptive:
   a) Increase tree resistance:

   b) Decrease stress(es) (pathogen(s)):

2. Reactive:
   a) Increase tree resistance:
   b) Decrease stress(es) (pathogen(s)):

3. Feasibility of option(s):
   a) Economic: cost vs. value.
   b) Ecological: Influence on other species in forest.
   c) Political: Laws and regulations.

IV. Name of Disease Complex: **Elm Yellows**

*A. Components.*

1. What is Diseased in Trees, Plants:

a) Susceptible species:

b) Symptom(s):

c) Diseased function(s):

(i) Tissue functions initially affected:

(ii) Potential impact on whole tree functioning:

(iii) Potential impact on forest.

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

a) Abiotic factor(s) &/or Latin name(s):

b) Signs:

3. Environment.

*B. Development - Interaction of disease triangle over time.*

1. Predisposing factors:

a) Degree of tree adaptations:

b) Degree of stress: Life cycle and mechanisms

2. Inciting conditions for disease: .

3. Contributing factors:

*C. Control options:*

1. Preemptive:
   a) Increase tree resistance:

   b) Decrease stress(es) (pathogen(s)):

2. Reactive:
   a) Increase tree resistance:
   b) Decrease stress(es) (pathogen(s)):

## V. Recommendations.

*A. Preemptive measures.*

*B. Monitor and Survey:*

*C. Reactive measures.*