SSSS Invasives 2017

Info

- 5 minutes per station
- Approx. 7 questions per station -> 88 questions
- 12 stations -> 1hr
- Questions with multiple answers are denoted with (# of answers), list all the answers for more points
- Each answer is ½-1 pt
- 80.5 max score

Answer Sheet

Station 1

1.
   - *A.*
   - B.
2.
3.
4.
   1.
   2.
5.
   1.
   2.
   3.
   4.
6.

Station 2

1.
2.
3.
4.
5.
6.
7.

Station 3

1.
2.
3.
4.
5.
6.
7.
   1.
   2.
   3.

Station 4

1.
2.
3.
4.
5.
6.
7.
8.

Station 5 = 7 max

1.
   - *A.*
   - *B.*
2.
3.
4.
   1. C____:
   2. C____:
   3. D____:

Station 6

1.
2.
3.
4.
   1.
   2.
5.
6.

Station 7

1.
2.
3.
4.
5.
6.
7.
8.

Station 8 = 6 max

1.
2.
3.
4.
5.
6.

Station 9

1.
2.
3.
4.
   1.
   2.
5.
   1.
   2.
   3.
6.
7.

Station 10

1.
2.
   a.
   b.
   c.
3.
4.
5.
6.

Station 12

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Station 1

1. Scientific names:
   A.
   B.

Remaining questions refer to both species

2. Emergence from eggs is favored by _____ temperatures.
3. Which species (A only, B only, A&B, neither A or B) is no longer present in the US?
4. Where should trees be inspected if an infestation is suspected? (2: anatomical structure, relative location)
5. What are some signs of an infestation? (4)
6. Wood packaging material from China is treated using which cautionary measure? _____

Station 2

1. Scientific name:
2. Which human disease does it spread?
3. What organism causes this disease? (scientific name)
4. How does it affect agriculture?
5. How does it affect soils to the detriment of native plants?
6. How does it survive cold temperatures?
7. T/F Its lightweight eggs are easily spread through water.

Station 3

1. Scientific name:
2. Which life stage caused this?
3. This is a vector of which bacterium?
4. Where does this bacterium multiply?
5. How is this bacterium passed from vector to vector?
6. Wilting of small plants is caused by nymphs doing what?
7. What are the symptoms on fruit?

____(3)

Station 4

1. Scientific name:
2. This is not just a cactus. What is this?
3. Why is this species intentionally introduced?
4. However, it was accidentally introduced from where to where (in the US)?
5. Which endangered genus does this threaten?
6. What is a cladode?
7. What is this species's relationship with a cladode?
8. Where does this species pupate?

Station 5

1. Scientific names:
   A.
   B.
2. Which species (A only, B only, A&B, neither A nor B) can survive in salt water?
3. A: How many siphons per head?
4. B: Name and describe the three preventative measures.

Station 6

1. Scientific name:
2. The greatest economic loss to agriculture is caused by what?
3. What is a phreatophyte? (HINT: relates to 2)
4. How does this species manipulate its environment to limit competition from other plants? (2)
5. What can kill stem cuttings?
6. How does this species react to burning?

Station 7

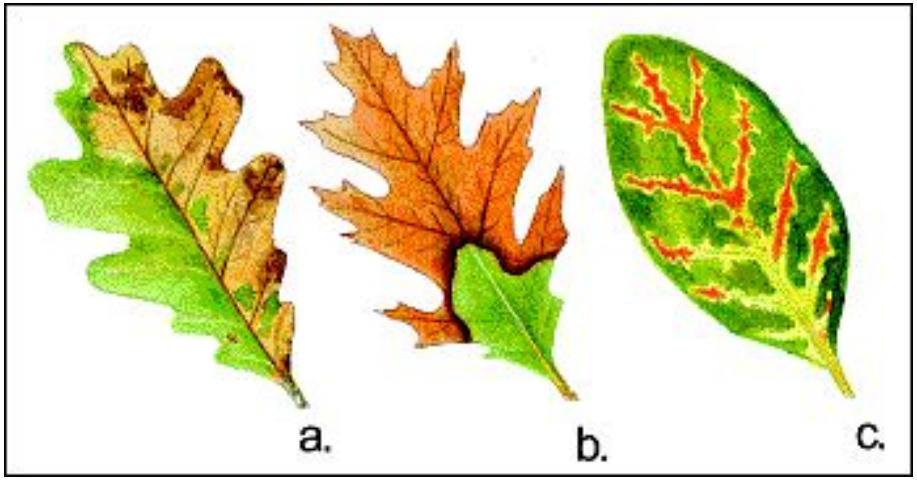
1. Scientific name:
2. Describe “labyrinth seeds”.
3. How are these “labyrinth seeds” an adaption to the environment?
4. In which state is this species no longer restricted?
5. Name two reproduction strategies.
6. What is special about the stems?
7. How are the stems adaptations to the environment?
8. How might one contract fasciolopsiasis from this species?

Station 8

1. Scientific name:
2. Where are these structures located?
3. What is the function of these structures?
4. Why does this species provide ideal conditions for mosquitoes?
5. This species cannot survive salinity levels over?
6. Which agricultural crop does this species mainly affect?

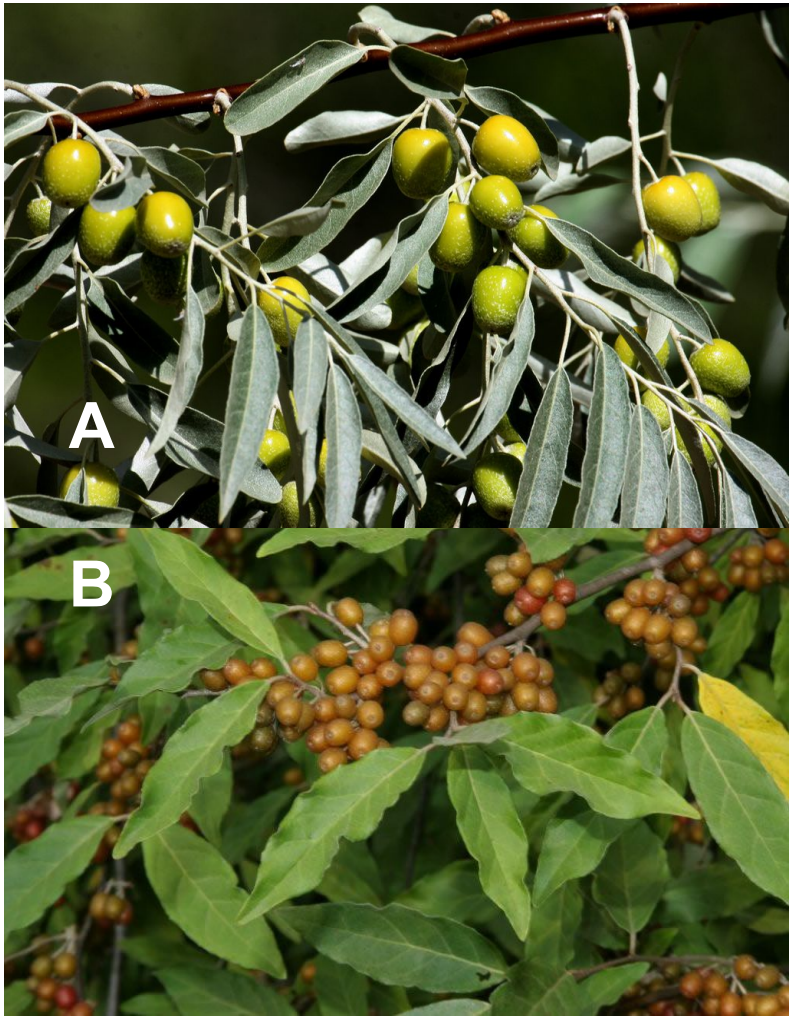
Station 9

1. Scientific name:
2. In which state is this species invasive?
3. Why was it intentionally introduced to that state?
4. Biocontrol agents? (2)
5. Why is fire usually not an effective control method? (3)
6. Describe a situation during which fire WOULD be an effective control method.
7. What is the risk to humans when fire is used?



Station 10

1. Scientific name:
2. These pictures show the symptoms of which three infected tree groups?
   a.
   b.
   c.
3. Which species (a, b, or c) will not survive infection?
4. Name the family of vectors for this disease.
5. What are tyloses?
6. Which species (a, b, or c) does not produce tyloses?



Station 11

1. Scientific names:
   A.
   B.
2. What climatic condition limits the distribution of B, but A can tolerate? (one word)

remaining questions refer to both species again

3. Like legumes, these two species can do what in their roots that allows them to survive in infertile soils?
4. Through symbiosis with what organism is #2 able to occur? (scientific name)
5. What climatic condition is required for germination?
6. How do these species respond when cut?
7. What should be applied to these species after they are cut for effective control?

Station 12

1. Scientific name:
2. What is the primary dispersal mechanism for this species?
3. This species is a threat to native species that grow during which part of the year?
4. This species is a vector of which petunia attacking virus?
5. T/F This species can self-pollinate.
6. T/F This species can cross-pollinate.
7. What is the genus of a group of weevils that could potentially control this species?
8. This species produces allelopathic chemicals that suppress what type of organism? (and thereby indirectly also suppress native trees)
9. When was this species introduced to the US?
10. For what purpose was it introduced?

Answers

Station 1 = 8 max

1.
    A. *Anoplophora glabripennis* (1)
    B. *Anoplophora chinensis (1)*
2. Warmer (1)
3. B only (1)
4. Under the bark OR in the wood (½), at the base of the trunk OR exposed roots (½)
5. T-shaped slit OR ovipositional scar (½), larval tunnels (½), frass OR sawdust (½), sap stain (½) TIE BREAKER
6. Heat treatment to an internal temperature of 56oC for 30 minutes (1)

Station 2 = 6 max

1. *Lissachatina fulica (1)*
2. Meningitis (½)
3. *Angiostrongylus cantonensis (½)*
4. It consumes large amounts of crops and plants (1)
5. Calcium carbonate in the shell (½) neutralizes acidic soils (½)
6. Dormancy (1)
7. F (1)

Station 3 = 6 max

1. *Homalodisca vitripennis (1)*
2. Egg (1)
3. *Xylella fastidiosa (½)*
4. mouthparts (½)
5. feeding on infected plants (½)
6. Feeding on xylem fluid (1)
7. Smaller (½), firm (½), white powdery dried excrement (½)

Station 4 = 6 max

1. *Cactoblastis cactorum (1)*
2. Egg stick (1) ← TIE BREAKER #2 FOR EXACT WORDS “egg stick”
3. To control invasive prickly pear cacti (½)
4. Caribbean to Florida (½)
5. Opuntia (1)
6. A pad-like leaf of a cactus (½)
7. Larvae eat the cladodes (½)
8. In the debris of rotting cladodes OR on the ground (1)

Station 5 = 8 max

1.
    A. *Styela clava (1)*
    B. *Didymosphenia geminata (1)*
2. A only (1)
3. 2 (1)
4. Check (½): check items BEFORE leaving site (½); Clean (½): detergent (½), hot water (½), freezing (½); Dry (½): dry completely, then wait an additional 48 hrs before reuse (½)

Station 6 = 6 max

1. *Tamarisk (1)*
2. Large loss of streamflow and groundwater (1)
3. A plant with a deep root system (1)
4. Shading (½), depositing salt in surface soil (½)
5. Drying (1)
6. Resprouts OR flowers (1)

Station 7 = 6 max

1. *Ipomoea aquatica (1)*
2. Filled with air pockets (½)
3. allows them to float, enabling seed dispersal by water (½)
4. Texas (1)
5. Wind pollination (½), fragmentation (½)
6. Hollow (½)
7. allows them to float (½)
8. Eating it raw (1)

Station 8 = 6 max

1. *Salvinia molesta (1)*
2. Fronds (1)
3. waterproofing (1)
4. Stagnates water (1)
5. 7 ppt (1)
6. Rice (1)

Station 9 = 6.5 max

1. *Melaleuca quinquenervia (1)*
2. Florida (½)
3. dry up the Everglades (½) (OK: decr mosquito pop, development)
4. *Oxyops vitiosa* (weevil) (½), *Boreioglycapsis* (melaleuca psyllid) (½)
5. seed release (½), destroys native seeds (½), favors germination (½)
6. When conditions are unfavorable for seed release, e.g. after summer rains when seedlings cannot survive flooding (1)
7. Essential oils = trees burn easily, so fires are hard to extinguish (1)

Station 10 = 6 max

1. *Ceratocystis fagacearum (1)*
2. These pictures show the symptoms of which three infected species?
    a. White oak (½)
    b. Red oak (½)
    c. Live oak (½)
3. B (1)
4. *Nitidulid (1)*
5. Outgrowths of oak vessel (xylem/sapwood) walls that prevent infections from spreading (1)
6. b (½)

Station 11 = 7 max

1.
    a. *Elaeagnus angustifolia (1)*
    b. *Elaeagnus umbellata (1)*
2. Extreme cold (1)
3. Fix nitrogen (½)
4. *Frankia (½)*
5. Cold, moist (1)
6. Resprout (1)
7. Herbicide (1)

Station 12 = 9 max

1. *Alliaria petiolata (1)*
2. Human disturbances (1)
3. Spring and early summer (1)
4. Allaria Mosaic Virus (1)
5. T (½)
6. T (½)
7. *Ceutorhynchus (1)*
8. Mycorrhizal fungi (1)
9. 1868 (1)
10. Food and medicine (1)