

Invasive Species C Test Answer KEY: Fairfax Competition 2017

1. *Hemigrapsus sanguineus* (Asian Shore Crab/Japanese Shore Crab) 1 pt for common name
2. This crab tolerates a wide range of salinity and temperatures. They can also produce 3-4 broods of 50,000 crabs per year. The larvae of this crab can float and transplant themselves over long distances (2 pts) tie-break depending on detail
3. 1988 off the coast of New Jersey. (2 pts)
4. *Ips typographus* (European Spruce Bark Beetle) 1 pt for common name
5. These bark beetles are native to Europe, but have become invasive in northern territories, especially Norway. While it has not become established in North America, it has been intercepted in wood products being imported to the continent. (3 pts)
6. This species has significant impacts on spruce tree stands. This can create huge losses in environmental diversity, as well as available lumber. (2 pts)
7. *Ceratocystis fagacearum* (Oak wilt) 1 point if common name given
8. Oak wilt was declared as a significant oak tree disease in Wisconsin in 1944. The fungus has been known to kill up to 50% of oak trees in certain areas. Other states do not experience such tree mortalities. (2 pts) tie-break depending on detail
9. Oak wilt fungal mats emit smells that attract sap drinking insects. These insects will be covered in spores of the fungus which can spread to other trees when the insects travel. (2 pts) tie-break depending on detail.
10. *Melaleuca quinquenervia* (Melaleuca/Paperbark) 1 pt for common name
11. Paperbark trees have become a concerning nuisance in the Everglades. This species is able to thrive in the wet, humid environment of the Everglades. Paperbark quickly outcompetes native plants and alters the Everglades' ecology. The paperbark's resistance to fires particularly prevents new seedlings from growing after nature fire cycles. (3pts) tie-break depending on detail
12. Paperbarks seem to be isolated to southern Florida as the frosts experienced in northern Florida seem to limit their expansion. (2 pts)
13. *Myriophyllum spicatum* (Eurasian Watermilfoil) 1 pt for common name
14. Eurasian Watermilfoil has most severely affected the Great Lakes area. This species does well in disturbed, sediment and nutrient rich areas, so the Great Lakes have provided opportunity. This plant outcompetes native species and chokes water flow to agriculture and leisure activity. (3 pts) tie-break depending on detail
15. Eurasian Watermilfoil is able to hybridize with native species of milfoil. These hybrid species can become even more aggressively invasive than the Eurasian species. (2 pts)
16. *Rhaponticum repens* (Russian knapweed) 1 pt for common name
17. Russian knapweed is a persistent perennial plant. This means the plant lives longer than a two year period. 2 pts
18. Russian knapweed releases an allelopathic chemical into the soil that disrupts the growth of nearby plants. Even after its removal, enough chemical may linger to inhibit new plant growth. 2 pts tie-break depending on detail
19. The pictured species is *Petromyzon marinus* (Sea Lamprey), and is principally associated with being invasive to the Great Lakes. This species is an aggressive ectoparasite, which attaches itself to large fish and feeds on their blood. This has drastically reduced the population of apex predators in the Great Lakes. Another invasive, *Alosa pseudoharengus* (Alewife), is a smaller fish who has benefitted from the absence of the large predatory fish like Whitefish and Trout. 3 pts tie-breaker depending on detail
20. Lampricide (a chemical that is toxic to sea lampreys, but not the vast majority of other organisms) has proven very effective at reducing their populations. This lampricide is released into rivers where the freshly spawned larvae are present. Many male lamprey can be caught and sterilized. This will ensure that any females who mate with the sterile lampreys do not produce offspring. (2 pts) tie-break depending on detail

21. *Sirococcus clavigignenti-juglandacearum* (Butternut canker)
22. Spores of butternut canker fungus spread easily from rain splash, wind, and may also utilize insect vectors. However, it is this fungus' ability to produce spores on dead trees that make it so virulent. Butternut canker has been known to produce spores on dead trees for up to 13 years. (2 pts)
23. This fungus has threatened the viability of Butternut tree stands. Butternut is highly valued as a lumber tree for a multitude of products including furniture, paneling, and firearm construction. (2 pts)
24. *Tomicus piniperda* (Common pine shoot beetle) 1 pt for scientific name
25. Adult beetles will feed on the pith of freshly grown, young stems in pines. This will reduce the growth of the trees and alter the shapes of the branches. With fewer branches and inconsistent shapes, this lowers the value of the trees as lumber. (2 pts)
26. A national quarantine was placed on the movement of pine and lumber products from infected areas in 1992. (2 pts)
27. *Bemisia argentifolii* (Silverleaf Whitefly/Sweetpotato whitefly)
28. Whiteflies had been known in the United States since 1896, however a new, more aggressive strain was found in Florida in 1986. These insects could feed on plant species not used before, and became a major vector in spreading diseases amongst commercial crops. (2 pts) Tie-break depending on detail
29. The pictured images show the whitefly's nymph stage. This is characterized by the waxy covering and prominent red eyes. At this point, the insects are immobile. (2 pts) tie-break depending on detail
30. *Centaurea calcitrapa* (Purple Star Thistle)
31. This plant was initially only invasive to California, but has recently spread as far north as Washington. It is likely that dried flowers or seeds have been dispersed through hay or feed from farms. Strong winds are also capable of carrying the dried flower tops, but are less likely to spread the plant as much. (2 pts) tie-break depending on detail
32. The sharp thorns and bitter taste of the Star Thistle discourage herbivores. This will cause the native plants to get eaten, giving the Star Thistle and opportunity to spread and push out native species of plants. (2 pts)
33. *Carduus nutans* (Musk Thistle)
34. Musk thistle plants can produce up to 120,000 seeds and those seeds can be spread for miles on the wind. Seeds can also remain viable for up to ten years on the ground. (2 pts) tie-break depending on detail

TIE-BREAKERS!!!!!!

Only complete these if you are done with the rest of the test! **You may answer directly on this page.**
Identify the **SCIENTIFIC NAME** of each species pictured below:



Ficaria verna



Schinus terebinthifolius



Agrilus planipennis



Styela clava



Solanum viarum



Monopterus albus



Arundo donax



Ceratitis capitata



Hypericum perforatum