

Invasive Species Test Answer Sheet: Battle for Valley Forge Invitational 2017

1. *Potamogeton crispus* (Curly pondweed) 1 pt for common name
2. Curly pondweed grows in massive blooms that die off in the mid-summer months. These die-offs absorb the O₂ in the water and release CO₂, this makes the habitat unusable by other species. (2 pts) tie-break depending on detail
3. Curly pondweed's tolerance of cold temperatures allows it to grow in the winter, which provides fish and other organisms a safe place to hide. (2 pts)
4. *Rosa multiflora* (Multiflora rose) 1 pt for common name
5. Multiflora roses were first introduced to the United States in the late 1800's as an ornamental flower. In the 1930's it was encouraged as a natural solution to erosion and cattle containment. This promotion continued as late as the 1970's. 2 pts tie-break depending on detail
6. While the plant is a rapid grower, dispersal happens mostly through the actions of birds eating and passing the rose's fruits (hips). 2 pts
7. *Carcinus maenas* (European green crab/European shore crab/green shore crab)
8. Green shore crabs impact a wide variety of commercially viable organisms including soft-shell crabs, scallop, northern quahog, smaller Dungeness crabs, and native California clams. (2 pts)
9. Green shore crabs may be able to be controlled by the introduction of *Sacculina carcini*, a parasitic barnacle. This barnacle species essentially takes over the crab and eventually kills it after reproducing. This should be used with caution on the west coast, as this barnacle has been shown to also kill native crab species. (2 pts) tie-break depending on detail
10. *Dreissena bugensis* (Quagga mussel)
11. Quagga mussels are filter feeders that suck in water through their siphons, filter out the plankton, then release the water. Removal of the plankton will impact the food web for many fish and zooplankton. The loss of these floating organisms increases the clarity of the water, which will allow light to penetrate further. This encourages the growth of large amounts of plants and algae. This will alter the biome for species, and without sufficient nutrients, the plants will die, decompose, and remove oxygen from the environment. (3 pts) tie-break depending on detail
12. *Microstegium vimineum* (Japanese Stilt Grass) 1 pt for common name
13. This species looks very similar to native grass species. While stilt grass can be removed by hand, it can be difficult to identify. (2 pts) tie-breaker depending on detail
14. Stilt grass can infest deer habitat rapidly. Deer will not eat stilt grass which causes them to seek new feeding territory. This often means they will become a nuisance in human habitations. (2 pts) tie-break depending on detail
15. *Anoplophora glabripennis* (Asian Long-horn Beetle) 1 pt for common name
16. This species was first detected in the northeastern American states in 1996 (some sources say 92). It was accidentally introduced from untreated shipping crates from China. This species caused particular damage to tree stands in New York City and Chicago. (2 pts) tie-break depending on detail
17. Since this species targets living trees, infected trees must be destroyed. In the United States, thousands of trees per year are destroyed to contain this beetle's spread. (2 pts)
18. One of the likely methods that introduced *Pterois volitans* (Red lionfish) to the Eastern American oceans was through ship ballast water. When boats expect rough seas, they will take on water in a chamber known as their ballast. This water will help stabilize the boat, but it also brings in many aquatic organisms (especially smaller, planktonic organisms). This has been the method of introduction for many invasive species. 3 pts tie-breaker depending on detail

19. Red lion fish are a highly carnivorous species that is quickly outcompeting the overfished grouper and red snapper. Not only is this species providing competition for food, but it is also not actively preyed on by many species, given its venomous nature. (2 pts) tie-break depending on detail
20. *Lygodium microphyllum* (Old World climbing fern) 1 pt for common name
21. The Old World climbing fern's prolific growth covers trees, even up to the canopy. This creates shade which blocks sun from competing plants, even the tree it is growing on. (2 pts)
22. This species can climb and overtake large trees. It is also known to create horizontal vines that reach between trees. If a forest fire starts, these vines can spread the fire into the tree canopies. (2 pts)
23. *Caulerpa taxifolia* (Caulerpa, Mediterranean clone) 1 point if common name given
24. The Mediterranean clone of Caulerpa has been bred to be resilient to pollutants as well as ultraviolet light. This strain also reproduces asexually which, when combined with the species' ability for prolific growth, creates a remarkably effective invasive. (2 pts)
25. *Elysia subornata* is a small marine slug who is a natural predator of Caulerpa. The fluid in the algae that most animals find noxious does not harm the slug. The slug is able to incorporate this chemical into its own body as a defense mechanism. (2 pts) tie-break depending on detail.
26. *Euphorbia esula* (Leafy spurge)
27. This species is noxious to some animals and decreases the carrying capacity of cattle ranges. It causes 10's of millions of dollars in loss for the beef industry every year. (2 pts)
28. *Lymantria dispar* (European gypsy moth)
29. Gypsy moth populations will often remain low without causing too much damage for about two years, then two years of heavy population growth and severe tree damage. This will cause gypsy moth populations to crash, and the cycle restarts. (2 pts) tie-break depending on detail
30. Gypsy moth larvae feed on the leaves of trees. These trees lose leaves to the point that their photosynthetic capabilities are compromised. This stress is often fatal to the tree. (2 pts)
31. *Pseudogymnoascus destructans* (Whitnose bat syndrome)
32. White nose syndrome is indicated by a white fungus growing on the bat's face and body. The condition causes these bats to become active during the winter months, burning their fat reserves, and killing up to 90% of their colonies. (2 pts) tie-break depending on detail
33. Cavers with unclean equipment can disturb the bats and spread the dormant fungus on their clothes or equipment. (2 pts)

**Tie-breakers may be
answered on the tie-breaker
page**

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