

INVASIVE SPECIES (2013)

1. **DESCRIPTION:** This event will test student knowledge of invasive species in local and national ecosystems.

A TEAM OF UP TO: 2

APPROXIMATE TIME: 50 minutes

2. **EVENT PARAMETERS:** Each **team** may bring one 3-ring binder (any size) containing pages of information in any form from any source. The pages must be 3-hole punched and inserted into the rings (sheet protectors are allowed).

*Note: Currently there is no field guide that includes all of the invasive species. In preparation for this exam students should consider preparing a resource binder based on invasive species identified by their state or regional director.

3. **THE COMPETITION:**

- a. Each team will be given an answer sheet on which they will record answers to each section.
- b. The competition may be run as stations and/or as a PowerPoint presentation.
- c. Specimens/pictures will be lettered or numbered at each station. The event could include live and preserved specimens, skeletal material, recordings of songs, and slides or pictures of specimens.
- d. Participants should be able to do basic identification to the level indicated on the Official List. States may have a modified state or regional list. See your state web site. No more than 50% of the competition will require providing common or scientific names.
- e. Each specimen will have one or more questions accompanying it on some aspect of its life history, distribution, anatomy and physiology, reproduction, habitat characteristics, ecology, diet, behavior, history, control methods, laws and regulation.
- f. The ecology questions may pertain to any ecological aspect of the species, including invasive behavior, habitat, niche, trophic level, or adaptive anatomy.
- g. Regional and State competitions may replace up to ten (10) local and regional species. The National competition may include all of the species on the **National Invasive Species Official List**.

4. **SAMPLE QUESTIONS:**

- a. Place in-order the life cycle pictures a zebra mussel.
- b. Which invasive plant is also a problem host for soybean aphids? (Common Buckthorn)
- c. Which genus of trees is threatened by the *Agilus* genus in America? (*Fraxinus*)

SCORING: Points will be awarded for the quality and accuracy of responses. Ties will be broken by the accuracy and/or quality of responses to several pre-identified questions.

RECOMMENDED RESOURCES: There is no universal field guide to the invasive species of the United States - see <http://www.invasivespeciesinfo.gov/unitedstates/>

National Invasive Species Official List

Invertebrate Species

Africanized Honeybee (*Apis mellifera scutellata*)
Asian Citrus Psyllid (*Diaphorina citri*)
Asian Long-Horned Beetle (*Anoplophora glabripennis*)
Asian Tiger Mosquito (*Aedes albopictus*)
Brown Marmorated Stink Bug (*Halyomorpha halys*)
Cactus Moth (*Cactoblastis cactorum*)
Chilli Thrips (*Scirtothrips dorsalis*)
Citrus Longhorned Beetle (*Anoplophora chinensis*)
Common Pine Shoot Beetle (*Tomicus piniperda*)
Emerald Ash Borer (*Agrilus planipennis*)
European Gypsy Moth (*Lymantria dispar*)
European Spruce Bark Beetle (*Ips typographus*)
Formosan Subterranean Termite (*Coptotermes formosanus*)
Giant African Snail (*Lissachatina fulica*)
Glassy-Winged Sharpshooter (*Homalodisca vitripennis*)
Hemlock Woolly Adelgid (*Adelges tsugae*)
Light Brown Apple Moth (*Epiphyas postvittana*)
Mediterranean Fruit Fly (*Ceratitis capitata*)
Mexican Fruit Fly (*Anastrepha ludens*)
Pink Bollworm (*Pectinophora gossypiella*)
Pink Hibiscus Mealybug (*Maconellicoccus hirsutus*)
Red Imported Fire Ant (*Solenopsis invicta*)
Russian Wheat Aphid (*Diuraphis noxia*)
Silverleaf Whitefly (*Bemisia argentifolii*)
Sirex Woodwasp (*Sirex noctilio*)
Soybean Cyst Nematode (*Heterodera glycines*)

Aquatic Animals

Alewife (*Alosa pseudoharengus*)
Asian Carps
Asian Clam (*Corbicula fluminea*)
Asian Shore Crab (*Hemigrapsus sanguineus*)
Asian Swamp Eel (*Monopterus albus*)
Bullfrog (*Lithobates catesbeianus*)
Chinese Mitten Crab (*Eriocheir sinensis*)
Clubbed Tunicate (*Styela clava*)
Eurasian Ruffe (*Gymnocephalus cernuus*)
European Green Crab (*Carcinus maenas*)
Flathead Catfish (*Pylodictis olivaris*)
Lionfish (*Pterois volitans*)
Northern Snakehead (*Channa argus*)
New Zealand Mud Snail (*Potamopyrgus antipodarum*)
Nutra (*Myocastor coypus*)
Quagga Mussel (*Dreissena bugensis*)
Round Goby (*Neogobius melanostomus*)
Rusty Crayfish (*Orconectes rusticus*)
Sea Lamprey (*Petromyzon marinus*)
Sea Squirt (*Didemnum vexillum*)
Spiny Water Flea (*Bythotrephes longimanus*)
Veined Rapa Whelk (*Rapana venosa*)
White Spotted Jellyfish (*Phyllorhiza punctata*)
Zebra Mussel (*Dreissena polymorpha*)

Plants

Air Potato (*Dioscorea bulbifera*)
Autumn Olive (*Elaeagnus umbellata*)
Beach Vitex (*Vitex rotundifolia*)
Brazilian Peppertree (*Schinus terebinthifolius*)

Canada Thistle (*Cirsium arvense*)
Chinese Tallow (*Triadica sebifera*)
Cogongrass (*Imperata cylindrica*)
Common Buckthorn (*Rhamnus cathartica*)
Common Teasel (*Dipsacus fullonum*)
Dalmatian Toadflax (*Linaria dalmatica*)
Diffuse Knapweed (*Centaurea diffusa*)
Downy Brome (*Bromus tectorum*)
Fig Buttercup (*Ficaria verna*)
Garlic Mustard (*Alliaria petiolata*)
Giant Hogweed (*Heracleum mantegazzianum*)
Hairy Whitetop (*Lepidium appelianum*)
Houndstongue (*Cynoglossum officinale*)
Japanese Climbing Fern (*Lygodium japonicum*)
Japanese Honeysuckle (*Lonicera japonica*)
Japanese Knotweed (*Fallopia japonica*)
Japanese Spiraea (*Spiraea japonica*)
Japanese Stilt Grass (*Microstegium vimineum*)
Johnsongrass (*Sorghum halepense*)
Kudzu (*Pueraria montana* var. *lobata*)
Leafy Spurge (*Euphorbia esula*)
Medusahead (*Taeniatherum caput-medusae*)
Mile-A-Minute Weed (*Persicaria perfoliata*)
Multiflora Rose (*Rosa multiflora*)
Musk Thistle (*Carduus nutans*)
Old World Climbing Fern (*Lygodium microphyllum*)
Oriental Bittersweet (*Celastrus orbiculatus*)
Princess Tree (*Paulownia tomentosa*)
Purple Star Thistle (*Centaurea calcitrapa*)
Quackgrass (*Elymus repens*)
Russian Knapweed (*Rhaponticum repens*)
Russian Olive (*Elaeagnus angustifolia*)
Saltcedar (*Tamarix* spp.)
St. Johnswort (*Hypericum perforatum*)
Scotch Broom (*Cytisus scoparius*)
Scotch Thistle (*Onopordum acanthium*)
Spotted Knapweed (*Centaurea stoebe*)
Tree-of-Heaven (*Ailanthus altissima*)
Tropical Soda Apple (*Solanum viarum*)
Whitetop (*Lepidium draba*)
Witchweed (*Striga asiatica*)
Yellow Star Thistle (*Centaurea solstitialis*)
Yellow Toadflax (*Linaria vulgaris*)

Aquatic Plants

Alligatorweed (*Alternanthera philoxeroides*)
Brazilian Waterweed (*Egeria densa*)
Caulerpa, Mediterranean Clone (*Caulerpa taxifolia*)
Common Reed (*Phragmites australis*)
Curly Pondweed (*Potamogeton crispus*)
Didymo (*Didymosphenia geminata*)
Eurasian Watermilfoil (*Myriophyllum spicatum*)
Giant Reed (*Arundo donax*)
Giant Salvinia (*Salvinia molesta*)
Hydrilla (*Hydrilla verticillata*)
Melaleuca (*Melaleuca quinquenervia*)
Purple Loosestrife (*Lythrum salicaria*)
Water Chestnut (*Trapa natans*)
Water Hyacinth (*Eichhornia crassipes*)
Water Lettuce (*Pistia stratiotes*)
Water Spinach (*Ipomoea aquatica*)