2016 INVASIVE SPECIES
SAMPLE TOURNAMENT

The sample tournament is based upon the Official National Invasive Species list

STATION A: TERMINOLOGY

TERMS

A. Native species

B. Invasive Species

C. Indigenous Species

D. Introduced Species

E. Feral Species

F. Alien Species

G. Human Commensal Species

H. Exotic Species

For each definition, select the appropriate term – use the letter(s) of the term on your answer sheet. (more than one term may apply)

1. **Native species that benefit from our land use or disturbance *(out of control natives)***

2. **A species living outside it native distribution range which has arrived there by human activity either deliberate or accidental**

3. **A species found within its natural range**

4. **An animal living in the wild but descended from domesticated individuals (released pets, livestock and game animals)**

5. **an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health**

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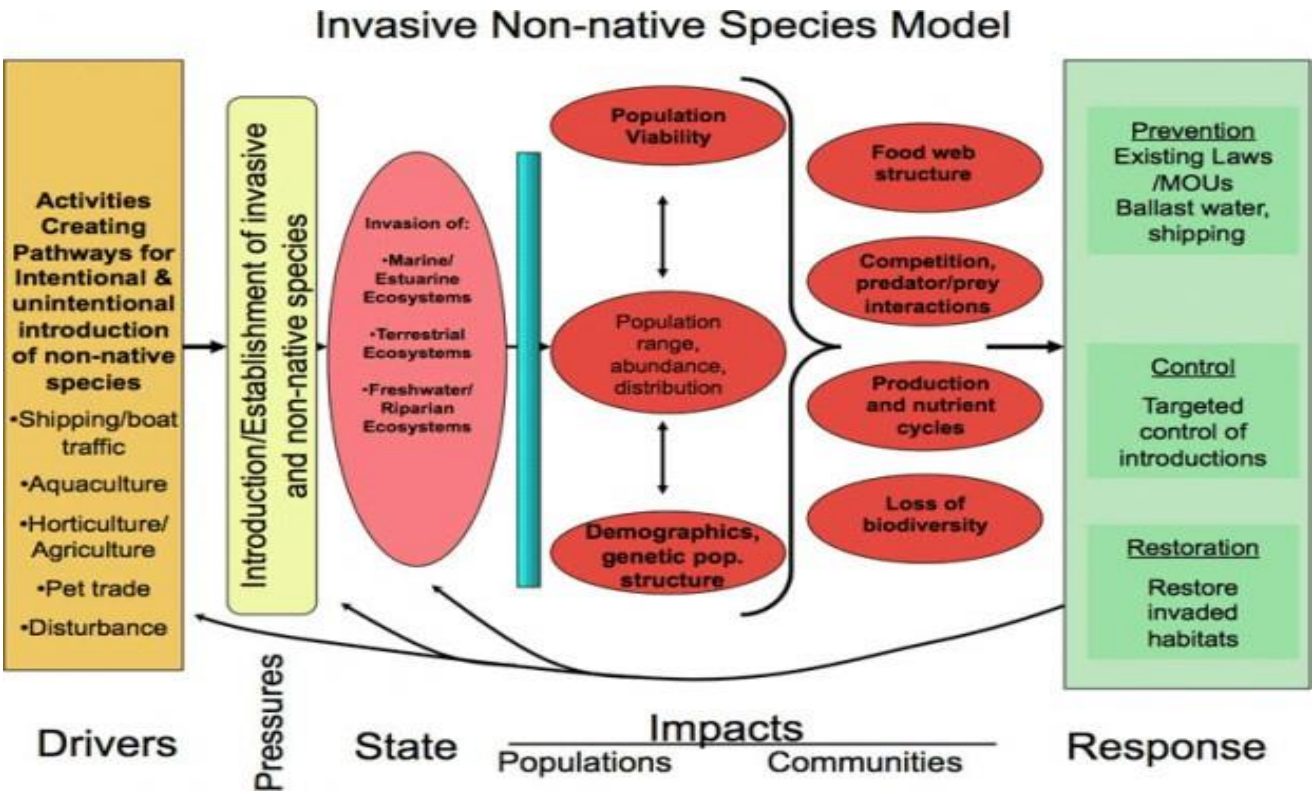
1. **Native species that benefit from our land use or disturbance *(out of control natives)***
   G
2. **A species living outside it native distribution range which has arrived there by human activity either deliberate or accidental**
   D F H
3. **A species found within its natural range**
   A C
4. **An animal living in the wild but descended from domesticated individuals (released pets, livestock and game animals)**
   E
5. **an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health**
   B

STATION B: Answer the following questions concerning Invasive Species



For each of the following statements, indicate whether the statement is true or false.

6. All introduced species become invasive species.

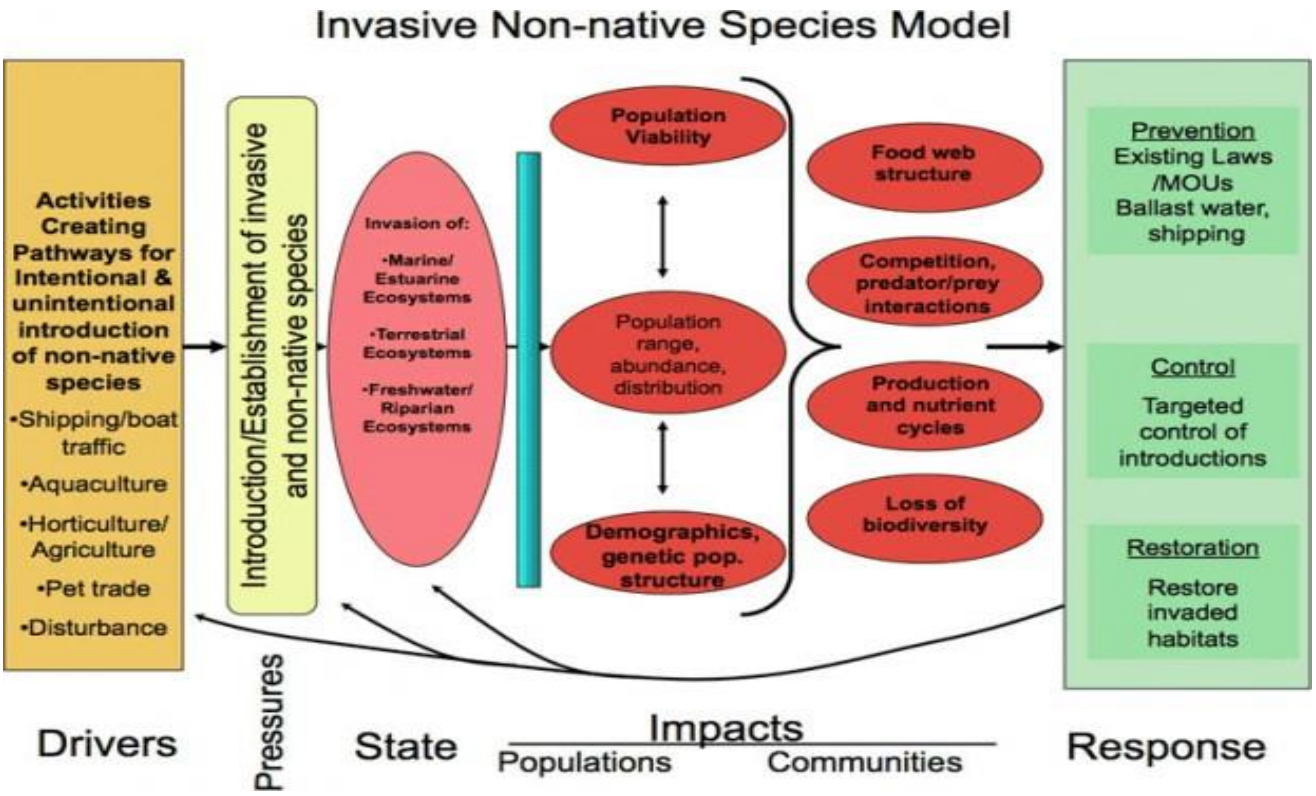
7. Invasive species can be introduced by intentional or accidental release of alien species.

8. All of the current invasive species have been controlled using Integrated Pest Control

9. There are advantages and disadvantages to the various control methods.

10. There are many federal and state laws and guidelines to prevent the spread of invasive species.

STATION B: Answer the following questions concerning Invasive Species



For each of the following statements, indicate whether the statement is true or false.

6. All introduced species become invasive species.
FALSE – only a small percent become invasive.

7. Invasive species can be introduced by intentional or accidental release of alien species.
TRUE

8. All of the current invasive species have been controlled using Integrated Pest Control
FALSE – some like the zebra mussel are out of control

9. There are advantages and disadvantages to the various control methods.
TRUE

10. There are many federal and state laws and guidelines to prevent the spread of invasive species.
TRUE

STATION C: Examine the information about this invasive plant and answer the questions.

11. **Give the common and then the scientific name of this plant.**

12. **In the early 1900's and in the 1930s and 1940s, the government paid farmers in the southeast US to use this vine for erosion control. (True or False)**

13. **This plant hosts nitrogen-fixing bacteria helping to improve soil quality. (True or false)**

14. **Why has this plant been declared an invasive species? What harm does it do?**

15. **What are the main types of control for this plant?**

STATION C: Examine the information about this invasive plant and answer the questions.

11. **Give the common and then the scientific name of this plant.**
    Kudzu *(Pueraria montana var. lobata)*
12. **In the early 1900's and in the 1930s and 1940s, the government paid farmers in the southeast US to use this vine for erosion control. (True or False)**
    TRUE
13. **This plant hosts nitrogen-fixing bacteria helping to improve soil quality. (True or false)**
    TRUE – it is a legume of the pea family
14. **Why has this plant been declared an invasive species? What harm does it do?**
    It crowds out and smothers native plants. It can cover trees or even houses. It is nicknamed the "the vine that ate the south" It can grow up to a foot a day. It can physically crush native species. It alters plant communities and the animals that rely on natural communities for food
15. **What are the main types of control for this plant?**
    Manual, mechanical, and chemical herbicides

STATION D: Examine the information about this invasive mussel and answer the questions.

16. Give the common and then the scientific name of this animal.

17. What is the common name and scientific name of the similar mussel that is an invasive species and what is the name of the larval stage for these mussels?

18. What was the mode of introduction for this organism and how is it now being spread?

19. Which of the following are effects caused by this invasive mussel. (List all of the letters that apply)

A. Are filter feeders and can filter 1 liter of water per day removing vital plankton
B. Accumulate organic pollutants within their tissues and deposit pollutants as pseudofeces.
C. Are used as a major food source for humans
D. Attach to native mussels often covering their shells and making them vulnerable to environmental stresses
E. Attach to hard surfaces like intake structures of power and treatment plants eventually blocking pipes
F. Are spread as larva and adult to new waterways.
G. Disruption of aquatic food chains by creating less food for native organisms

20. The spread of this species is so intense that a national initiative was formed to halt its spread. Name this national initiative and the newest action plan for the Western U.S.

STATION D: Examine the information about this invasive mussel and answer the questions.

16. Give the common and then the scientific name of this animal.

Zebra Mussel *(Dreissena polymorpha)*

17. What is the common name and scientific name of the similar mussel that is an invasive species and what is the name of the larval stage for these mussels?

Quagga Mussel *(Dreissena bugensis)* veligers

18. What was the mode of introduction for this organism and how is it now being spread?

ballask water from ocean vessels - recreational boats carry veligers and adults

19. Which of the following are effects caused by this invasive mussel. (List all of the letters that apply) A,B,D,E,F,G (ALL BUT C)

A. Are filter feeders and can filter 1 liter of water per day removing vital plankton
B. Accumulate organic pollutants within their tissues and deposit pollutants as pseudofeces.
C. Are used as a major food source for humans
D. Attach to native mussels often covering their shells and making them vulnerable to environmental stresses
E. Attach to hard surfaces like intake structures of power and treatment plants eventually blocking pipes
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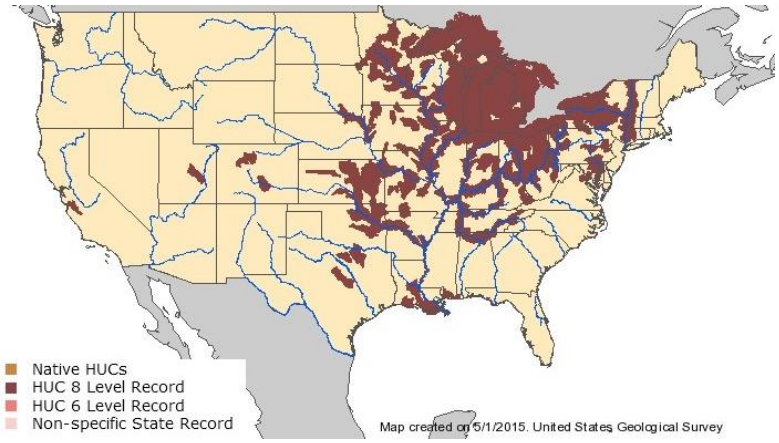
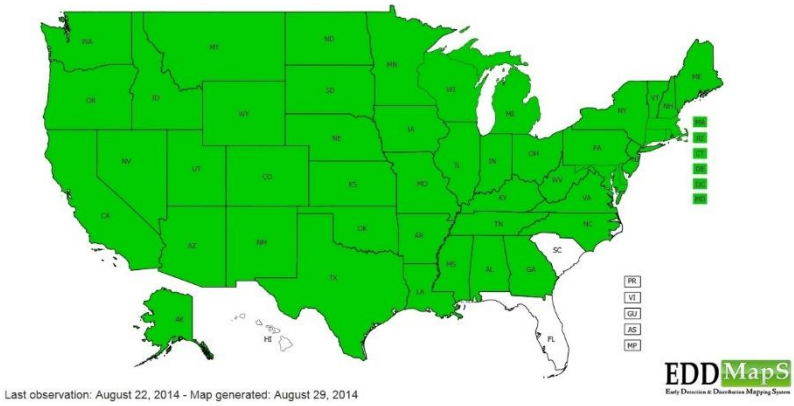
G. Disruption of aquatic food chains by creating less food for native organisms

20. The spread of this species is so intense that a national initiative was formed to halt its spread. Name this national initiative and the newest action plan for the Western U.S.

100TH MERIDIAN INITIATIVE and Quagga-Zebra Mussel Action Plan for Western U.S. Waters

STATION E: Examine the information about this invasive plant and answer the questions.





Map A **Map B**

21. Give the common and then the scientific name of this plant.

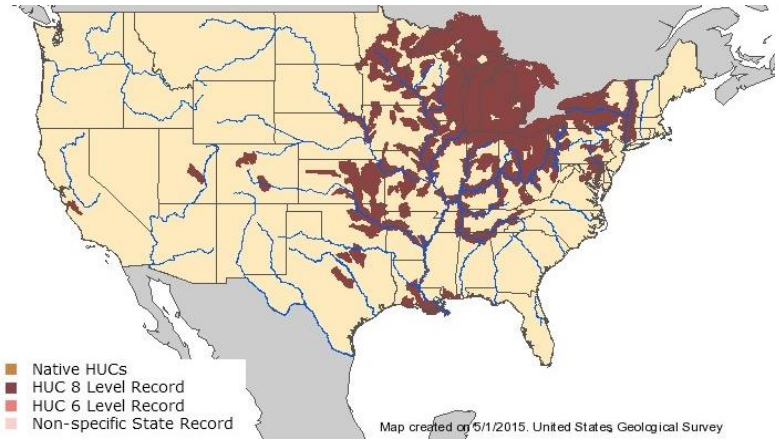
22. In what environment does this invasive plant thrive?

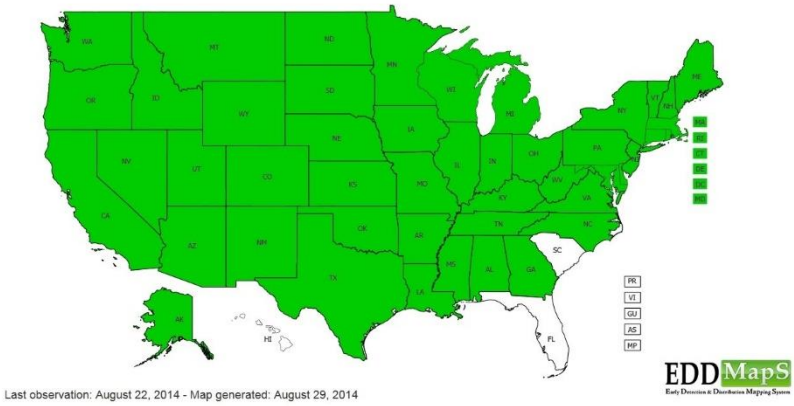
23. Which distribution map (A or B) represents this plant?

24. What impact does this plant have on the environment it has invaded?

25. The Aquatic Nuisance Species (ANS) has a new expanded plan for 2013-2017 that includes this aquatic nuisance specie Name this plan.

STATION E: Examine the information about this invasive plant and answer the questions.





Map A **Map B**

21. Give the common and then the scientific name of this plant.

Purple Loosestrife *(Lythrum salicaria)*

22. In what environment does this invasive plant thrive?

Wetlands and other moist areas

23. Which distribution map (A or B) represents this plant?

B A is the zebra mussel

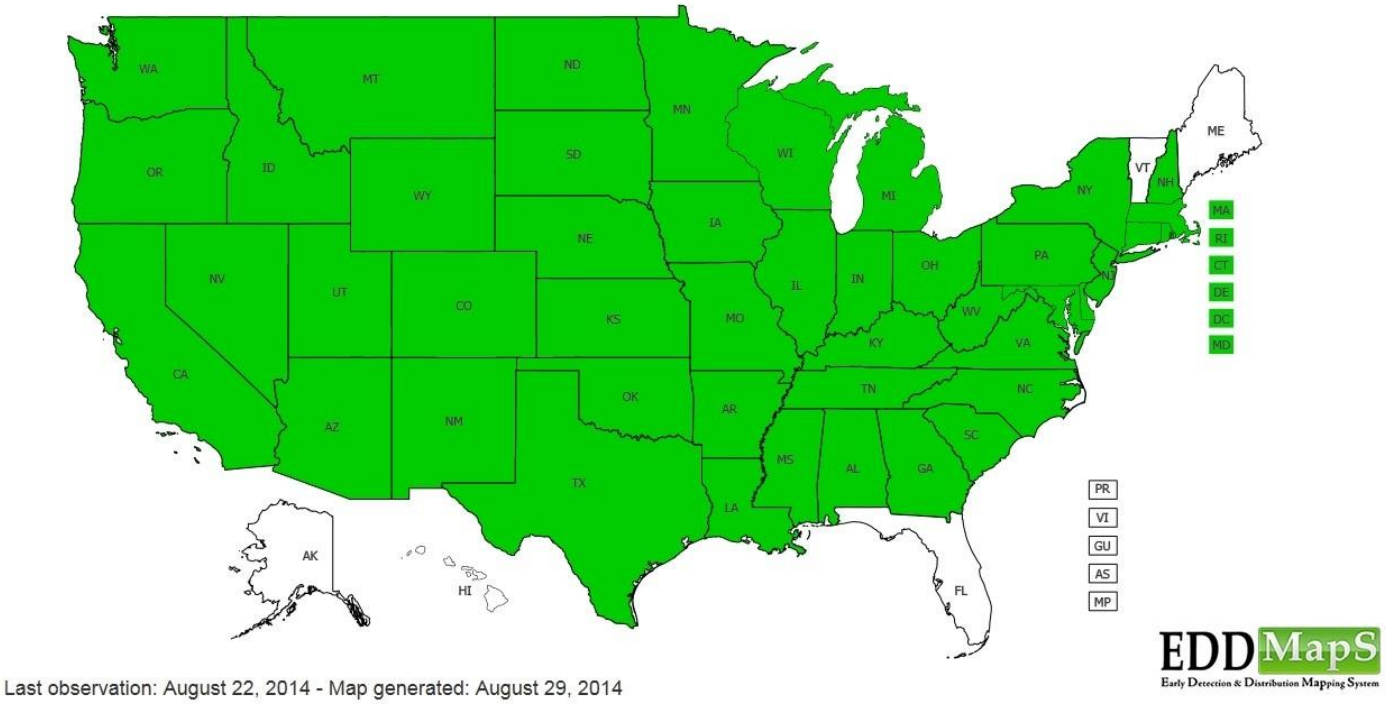
24. What impact does this plant have on the environment it has invaded?

it displaces native species and degrades the natural habitat

25. The Aquatic Nuisance Species (ANS) has a new expanded plan for 2013-2017 that includes this aquatic nuisance specie Name this plan.

Aquatic Nuisance Species Task Force Strategy Plan (2013-2017)

STATION F: Examine the information about this invasive plant and answer the questions.



Last observation: August 22, 2014 - Map generated: August 29, 2014

26. Give the common and then the scientific name of this plant.

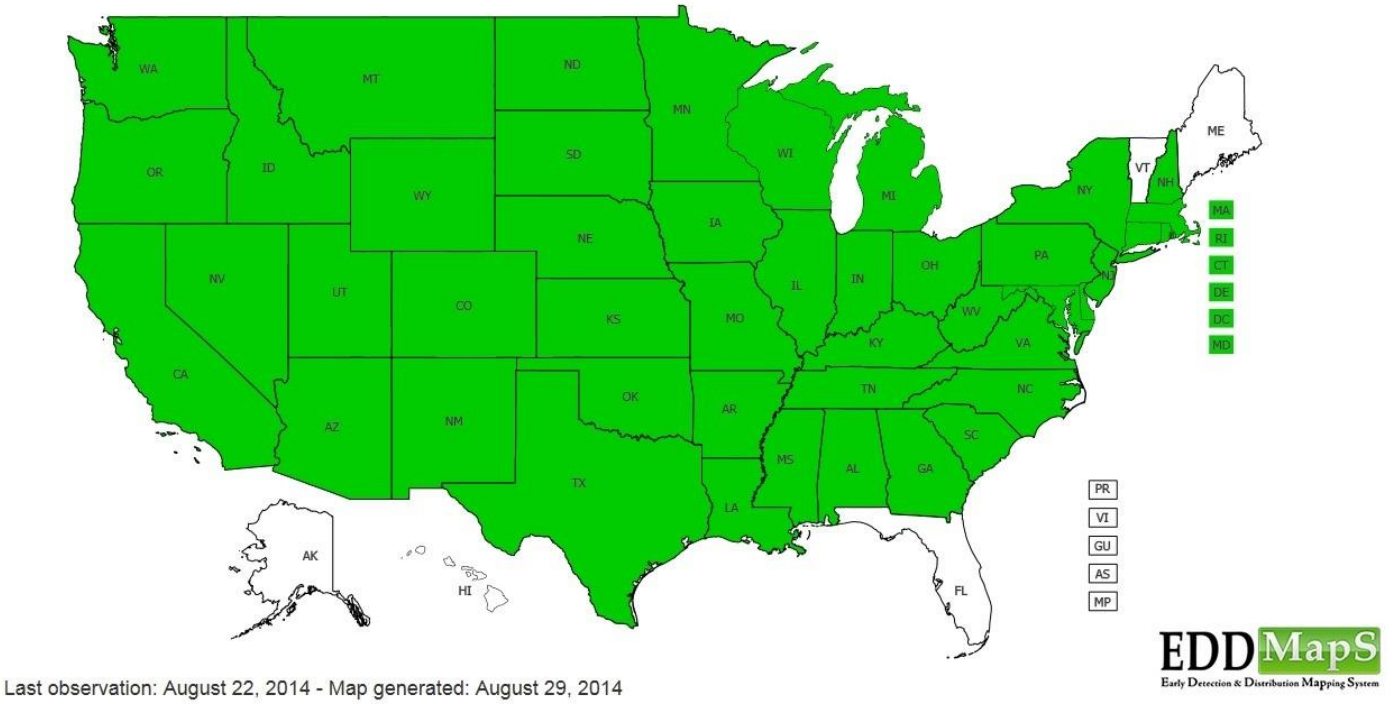
27. In what environment is this weed found?

28. What is the impact of this invasive plant?

29. In which 5 states has this plant not been observed?

30. What is the best approach to control of this plant? (mechanical, cultural, chemical, biological or integrated)

STATION F: Examine the information about this invasive plant and answer the questions.



Last observation: August 22, 2014 - Map generated: August 29, 2014

26. Give the common and then the scientific name of this plant.

Musk Thistle *(Carduus nutans)*

27. In what environment is this weed found?

pasture and range lands

28. What is the impact of this invasive plant?

It crowds out native species and forage for livestock. Animals will need graze near it because of its thistle thorns.

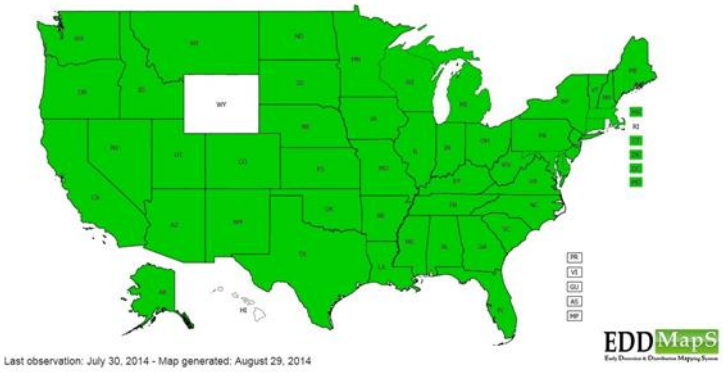
29. In which states has this plant not been observed?

AK, HI, FL, VT, ME

30. What is the best approach to control of this plant? (mechanical, cultural, chemical, biological or integrated)

Integrated – (biological – weevils, chemical –herbicides, mechanical – physically removing)

STATION G: Examine the information about this Invasive Specie and answer the questions.



31. Give the common and then the scientific name of this plant.

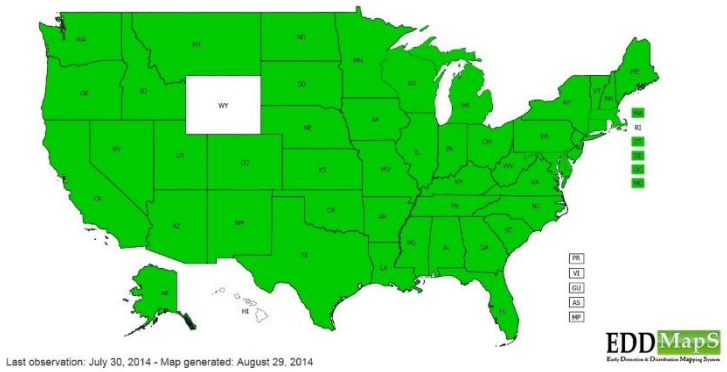
32. What was the probably means of introduction for this plant?

33. What is the impact of this invasive plant?

34. What is the range of invasion for this plant? Where has it been reported?

35. What is the most effective means of control for this invasive plant? How expensive is the process?

STATION G: Examine the information about this Invasive Specie and answer the questions.



31. Give the common and then the scientific name of this plant.

Eurasian Watermilfoil *(Myriophyllum spicatum)*

32. What was the probably means of introduction for this plant?

Unknown, possibly through the aquarium trade or transport of watercraft

33. What is the impact of this invasive plant?

Crowds out native species - the dense mats of leaves restrict light availability, leading to a decline in the diversity and abundance of native species and it and reduces habitats for fish spawning and feeding

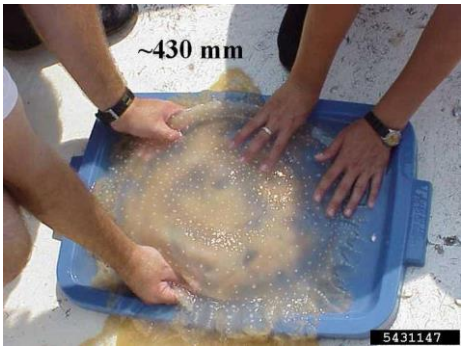
34. What is the range of invasion for this plant? Where has it been reported?

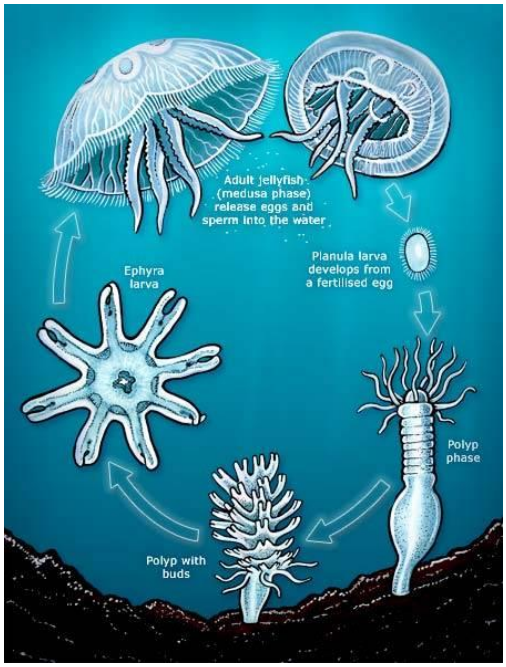
It has been reported in all states except WY, RI, and HI

35. What is the most effective means of control for this invasive plant?

Integrated Plan including Mechanical removing: Chemical – herbicides as fluridone and liquid DMA 2,4-D, biological agents as the North American weevil are being researched as possible agents in the Midwest --- cost = millions of dollars/year

STATION H: Examine the information about this Invasive animal and answer the questions.





36. Give the common and then the scientific name of this animal.

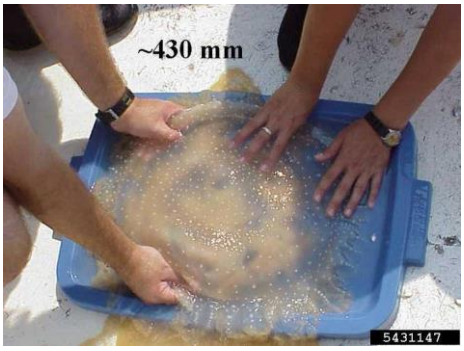
37. Where was this animal first discovered in the U.S. and how was it introduced?

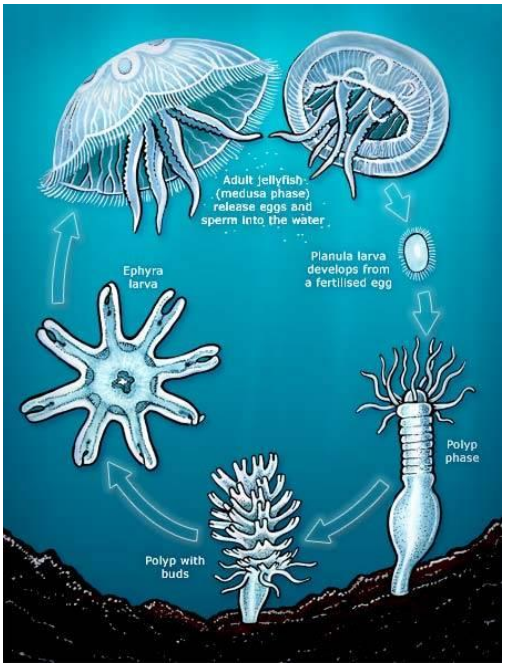
38 What is the main food source for this animal?

39. What damage do they do to the ecosystem?

40. Where are they a problem and how are they controlled?

STATION H: Examine the information about this Invasive animal and answer the questions.





36. Give the common and then the scientific name of this animal.
White Spotted Jellyfish *(Phyllorhiza punctata)*

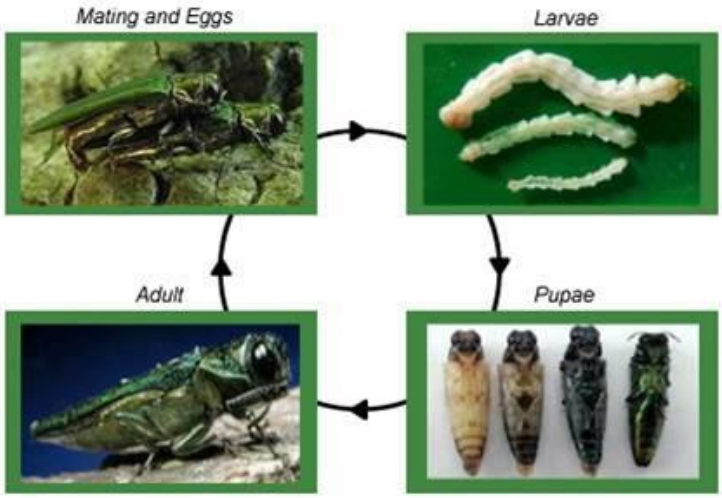
37. Where was this animal first discovered in the U.S. and how was it introduced?
First discovered in 1981 in California- Probably entered from the Pacific Ocean through the Panama Canal on the hulls of ships-it has been theorized that budding polyps may have attached themselves to ships, or were carried in a ship's ballast tank which was subsequently dumped

38. What is the main food source for this animal? they are filter feeders, like oysters or sponges. Microscopic zooplankton are their main food source and they can filter more than 50 cubic meters (1,766 cubic feet) of seawater every day

39. What damage do they do to the ecosystem? they often travel in large groups called swarms or smacks, they can disrupt the entire ecosystem of an area by consuming almost all the plankton. Fish, crustaceans, and marine mammals may not be able to find sufficient food in an area with swarms of these animals

40. Where are they a problem and how are they controlled? they impact ecosystems in the Gulf of California, Gulf of Mexico, and Caribbean Sea – they are an introduced species in Hawaii - Oahu - Pearl and Honolulu Harbors, Ala Wai Canal and Yacht Harbor, Kaneohe Bay

STATION I: Examine the information about this invasive animal and answer the questions.



41. Give the common and then the scientific name of this animal.

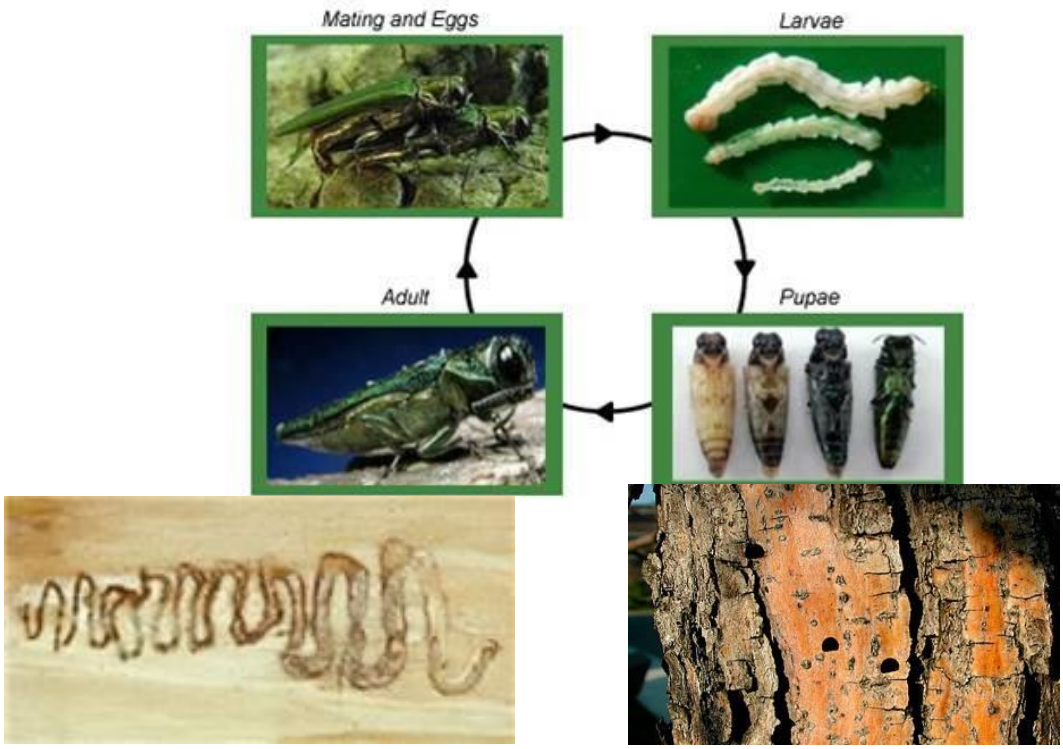
42. Where was it discovered in the U.S. and how has it spread?

43. What is the impact of these animals?

44. What is the cost of the destruction caused by this insect?

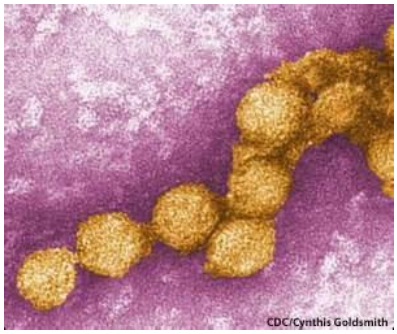
45. What is being done to halt the spread of this insect?

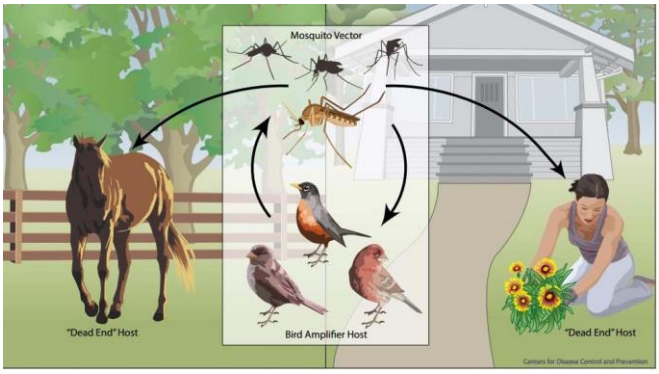
STATION I: Examine the information about this invasive animal and answer the questions.



41. **Give the common and then the scientific name of this animal.**
    Emerald Ash Borer *(Agrilus planipennis)*
42. **Where was it discovered in the U.S. and how has it spread? Emerald ash borer probably arrived in the United States on solid wood packing material carried in cargo ships or airplanes originating in its native Asia. EAB was first discovered in the U.S., near Detroit, MI in 2002 but is thought to have been introduced to the area several years prior to detection. EAB is now distributed throughout 18 states and the District of Columbia**
43. **What is the impact of these animals? The adult beetles nibble on ash foliage but cause little damage. The larvae (the immature stage) feed on the inner bark of ash trees, disrupting the tree's ability to transport water and nutrients. Trees lose 30 to 50% of canopy after 2 years infestation and die within 3–4 years- It is a highly destructive invasive insect, killing an estimated 50 to 100 million ash trees in Canada and the United States**
44. **What is the cost of the destruction caused by this insect? It costs municipalities, property owners, nursery operators and forest products industries tens of millions of dollars**
45. **What is being done to halt the spread of this insect? regulatory agencies and the USDA enforce quarantines and impose fines to prevent potentially infested ash trees, logs or hardwood firewood from moving out of areas where EAB occurs**

STATION J: Examine the information about this Invasive and answer the questions.





46. Give the name of this virus and the type of virus that it is.

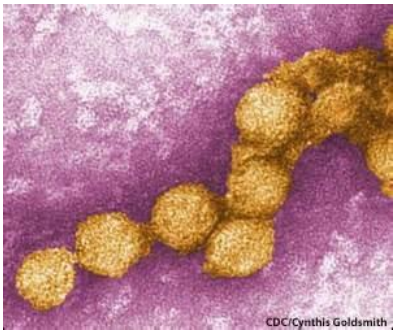
47. Where and when was this disease first reported in the world? In the U.S.?

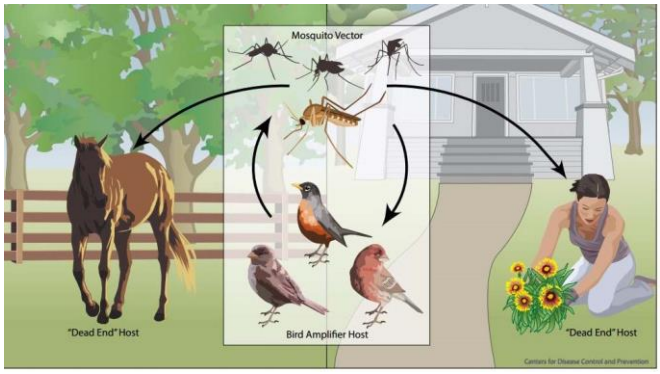
48. What disease does it cause and what are the symptoms?

49. How is this disease spread?

50. What can be done to reduce the risk of contracting this disease?

STATION J: Examine the information about this Invasive and answer the questions.





46. **Give the name of this virus and the type of virus that it is.**
    West Nile Virus (Flavivirus)
47. **Where and when was this disease first reported in the world? In the U.S.?**
    WNV was first isolated in the West Nile area of Uganda in 1937 from a woman with a fever. It was introduced into the US in 1999.
48. **What disease does it cause and what are the symptoms?**
    West Nile Virus – about 80% of those infected with WNV have no symptoms, Up to 20 percent of the people who become infected will display symptoms which can include fever, headache, and body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach and back.. Less than 1% develop inflammation of the brain (encephalitis) and meningitis. Most deaths are in those over 50 yrs. old.
49. **How is this disease spread? The virus is transmitted by infected mosquitoes. . Mosquitoes become infected when they feed on infected birds. Infected mosquitoes can then spread WNV to humans and other animals when they bite. They usually feed on birds which host the virus but also bite humans and horses. WNV also has been spread through blood transfusions, organ transplants, breastfeeding and even during pregnancy from mother to baby. ▪ Not through touching. WNV is not spread through casual contact such as**
50. **What can be done to reduce the risk of contracting this disease?**
    Protect yourself from mosquito bites and eliminate common mosquito breeding grounds as neglected swimming pools, open boats, clogged rain gutters, leak watering equipment, tarps collecting waer, plant saucers, tires collecting water bird baths (change once a week), or anything that can hold water for more than a few days

STATION K: Examine the information about this invasive plant and answer the questions.

51. Give the common and then the scientific name of this plant.

52. How and when was the plant introduced into the U.S.?

53. How big a problem is this invasive plant across the U.S.?

54. What impact does this invasive plant have?

55. What are the most widely used management options for this invasive plant?

STATION K: Examine the information about this invasive plant and answer the questions.

51. **Give the common and then the scientific name of this plant.**
    Multiflora Rose *(Rosa multiflora)*
52. **How was the plant introduced into the U.S.?**
    Cultivated as an ornamental, as rootstock for grafted ornamental rose cultivars, for erosion control, and as a living fence
53. **How big a problem is this invasive plant across the U.S.?**
    It is found in 42 states and is classified as either a noxious weed, prohibited invasive species or banned, in 13 states and is among the top forest invasive plant species for the northeastern area by the US Forest Service.
54. **What impact does this invasive plant have?**
    It is extremely prolific and can form dense thickets, excluding native plants species. This non-native invasive rose invades open woodlands, forest edges, early succession pastures and fields. It also invades fence rows, right-of ways, roadsides, and margins of swamps and marshes.
55. **What are the most widely used management options for this invasive plant?**
    Mechanical (Seedlings can be pulled by hand. Small plants can be dug out or larger ones can be pulled using a chain or cable and a tractor, but care needs to be taken to remove all roots-repeated cutting or mowing at the rate of three to six times per growing season, for two to four years, has been shown to be effective in achieving high mortality of mulitflora rose) and chemical methods (systemic herbicides, such as glyphosate or triclopyr, to freshly cut stomp or to re growth, may be the most effective method)

STATION L: Examine the information about this invasive fish and answer the questions.

56. Give the common and then the scientific name of this animal.

57. How and when was this invasive fish introduced into the U.S.?

58. Where is this fish currently found in the U.S.?

59. What is the impact of this invasive fish?

60. What is the current program to control this invasive fish?

STATION L: Examine the information about this invasive fish and answer the questions.

56. Give the common and then the scientific name of this animal.
Lionfish *(Pterois volitans)*

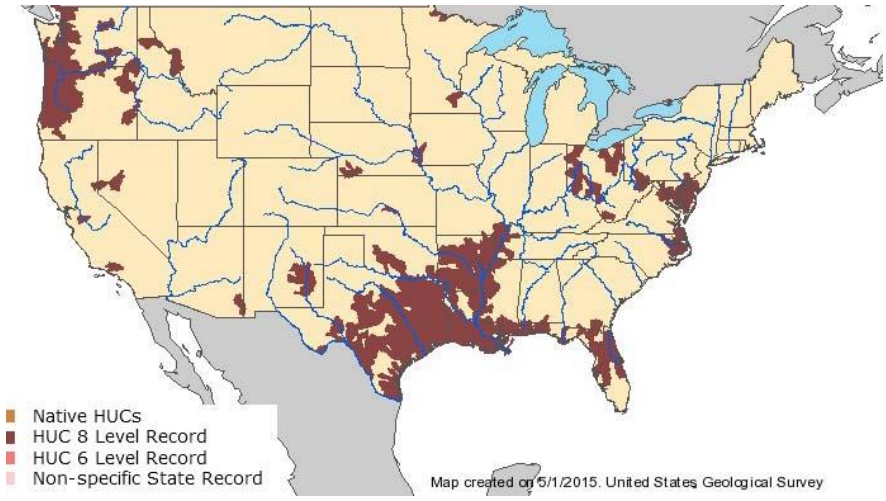
57. How and when was this invasive fish introduced into the U.S.?
1980s via aquarium trade and has spread rapidly

58. Where is this fish currently found in the U.S.?
Along the U.S. eastern seaboard, Gulf of Mexico, and Carribean

59. What is the impact of this invasive fish?
They are capable of permanently impacting native reef fish communities across multiple trophic levels and have been preying on and competing with a wide range of native species-many as snapper and grouper who have economic importance. They amy hamper stock rebuilding efforts and coral reef conservation measures.

60. What is the current program to control this invasive fish?
Efforts to control lionfish throughout the temperate and tropical Atlantic are utilizing various resources including harvesting as a food fish, making it the first invasive marine fish promoted for consumption in the region.
NOAA has launched an "Eat Lionfish" campaign

STATION M: Examine the information about this invasive animal and answer the questions.



61. Give the common and then the scientific name of this animal.

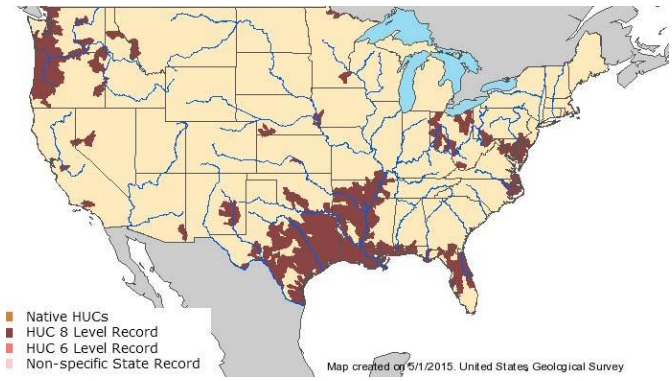
62. Why was this invasive animal introduced into the U.S.?

63. What is the impact of this invasive animal?

64. Why have the nutria populations increased?

65. What methods are being used to control the population of this rodent?

STATION M: Examine the information about this invasive animal and answer the questions.



61. Give the common and then the scientific name of this animal.

Nutria *(Myocastor coypus)*

62. Why was this invasive animal introduced into the U.S.?

This large rodent that looks like a beaver was introduced for fur production by the fur industry

63. What is the impact of this invasive animal?

All significant nutria populations are in coastal areas, and freshwater marshes are the preferred habitat- it is almost entirely herbivorouss and it damages vegetation and destroys habitat in wetlands - opportunistic feeders and eat approximately 25% of their body weight daily

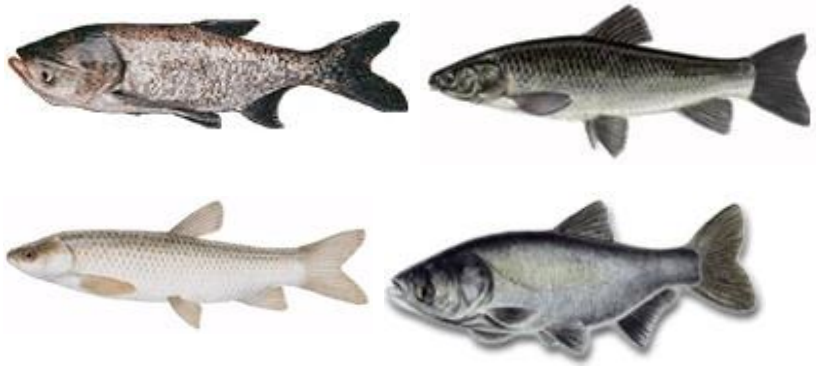
64. Why have the nutria populations increased?

They have no natural enemies to control the population – they are very prolific breeders and breed all year. As an example of their proliferation: in 1938, twenty individual nutria were introduced into Louisiana and within twenty years, the nutria population exceed 20 million animals. By 1962, the nutria had replaced the native muskrat as the leading furbearer in Louisiana.

65. What methods are being used to control the population of this rodent?

A combination of different traps and trapping strategies are being used to control nutria

STATION N: Examine the information about this invasive fish and answer the questions.



66. Give the common and then the scientific name of these fish.

67. How were these species introduced? .

68. How do these fish spread?

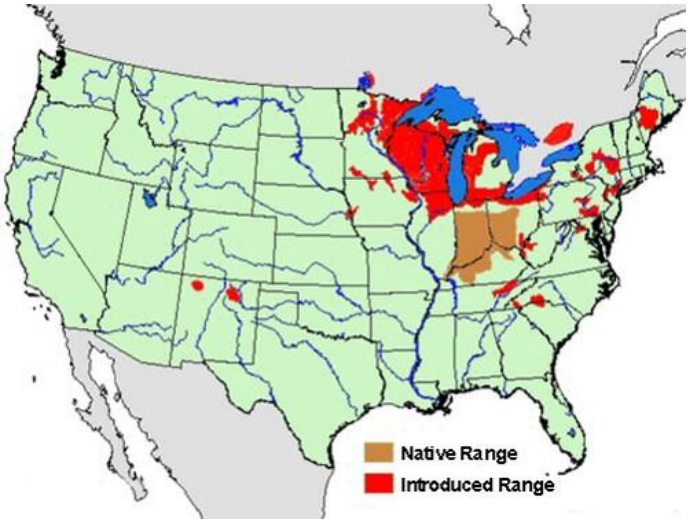
69. What are the ecological risks and impacts of these fish?

70. What is the major concern regarding the spread of these fish?

STATION N: Examine the information about this invasive fish and answer the questions.

66. **Give the common and then the scientific name of these fish.**
bighead carp *(Hypophthalmichthys nobilis)*, - black carp *(Mylopharyngodon piceus)*, - grass carp *(Ctenopharyngodon idella)*, - silver carp *(Hypophthalmichthys molitrix)*
67. **How were these species introduced? .**
Black carp was a "contaminant" in imported grass carp stocks; other three species were imported for aquaculture and for phytoplankton control
68. **How do these fish spread? they are capable of jumping over barriers, including low dams. Flooding can spread these fish as well, because flooding can connect water bodies that aren't normally connected. This makes it possible for fish to travel to new areas. The release of live bait containing young carp has introduced these fish to numerous water bodies. Watercraft that use the Mississippi locks allow carp to move upstream when the locks are opened to allow boats through. Additionally, boats that aren't drained after use can carry young carp or eggs that may be released into the water the next time the boat is use**
69. **What are the ecological risks and impacts of these fish?**
***bighead,silver, and black carp.*- known risks include rapid range expansion and population increase which could decrease abundance of native mussels, other invertebrates, and fishes. *Grass carp* can eliminate vast areas of aquatic plants that are important as fish food and spawning and nursery habitats. Losses of those habitats can potentially reduce recruitment and abundance of native fishes. Black carp could reduce abundance of already rare snails, mussels, and other invertebrates. Silver carp can jump at least 10 feet out of the water and that behavior has resulted in injuries to boaters. Collisions between boaters and jumping silver carp have the potential to cause human fatalities.**
70. **What is the major concern regarding these fish?**
They are currently in the Missippi River Basin and there is concern that they will move into the Great Lakes through the Chicago canal system.

STATION O: Examine the information about this invasive animal and answer the questions.



71. Give the common and then the scientific name of this animal.

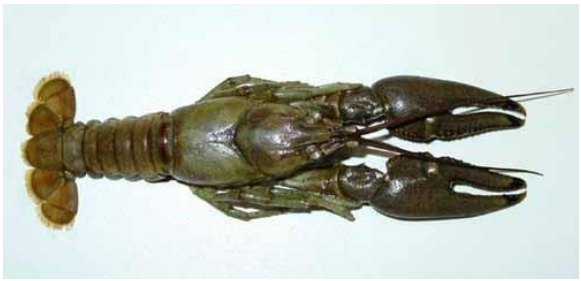
72. Where is the native range of this crayfish?

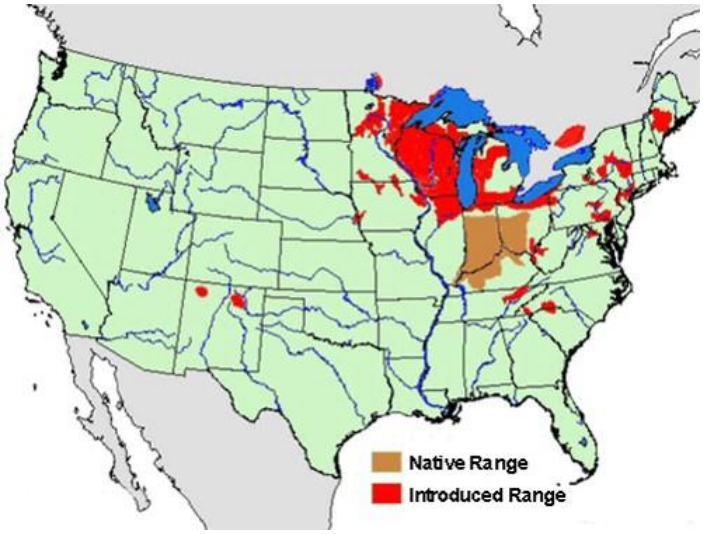
73. How has this crayfish spread and become invasive in other parts of the country?

74. What ecologically problems caused by their introduction?

75. How are these crayfish populations controlled?

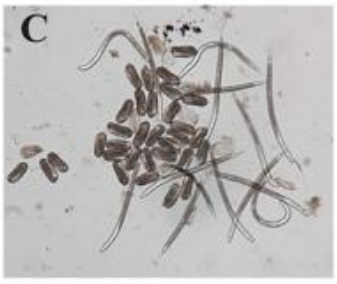
STATION O: Examine the information about this invasive animal and answer the questions.

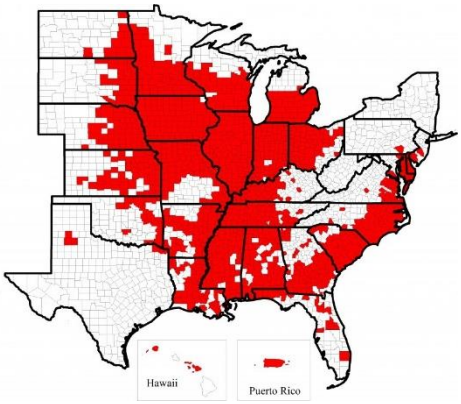


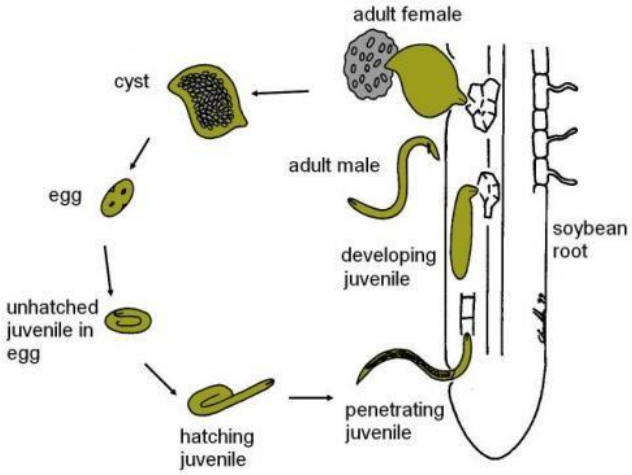


71. **Give the common and then the scientific name of this animal.**
    Rusty crayfish (*Orconectes rusticus*)
72. **Where is the native range of this crayfish?**
    The Ohio River Basin
73. **How has this crayfish spread and become invasive in other parts of the country?**
    They were spread by non-resident anglers who bring them along to use as fishing bait and then release them - as rusty crayfish populations increase in many areas, they are harvested for the regional bait market, biological supply companies, and food. Such activities probably help spread the species farther
74. **What ecologically problems caused by their introduction?**
    They displace native crayfish,; reduce the amount and kinds of aquatic plants,; decrease the density and variety of invertebrates (animals lacking a backbone), and reduce some fish populations
75. **How are these crayfish populations controlled?**
    Rusty crayfish may be controlled by restoring predators like bass and sunfish populations. Preventing further introduction is important and may be accomplished by educating anglers, trappers, bait dealers and science teachers of their hazards- Do not use rusty crayfish as bait in areas where it is not native. Never transport bait from one water body to another. Discard your bait in the trash before leaving. Never release pet crayfish (or any other organisms) into the wild

STATION P: Examine the information about this invasive animal and answer the questions.







76. Give the common and then the scientific name of this animal.

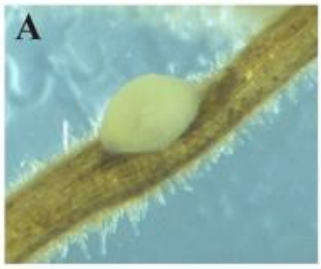
77. Why type of damage does this animal cause?

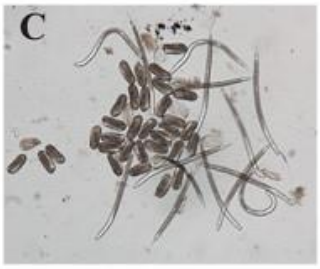
78. Once present in the soil, this animal can never be eliminated. (true or false)

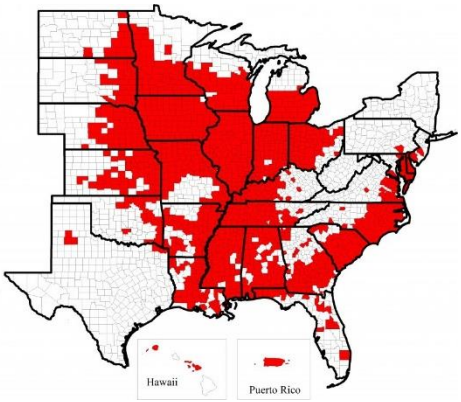
79. How is this animal detected?

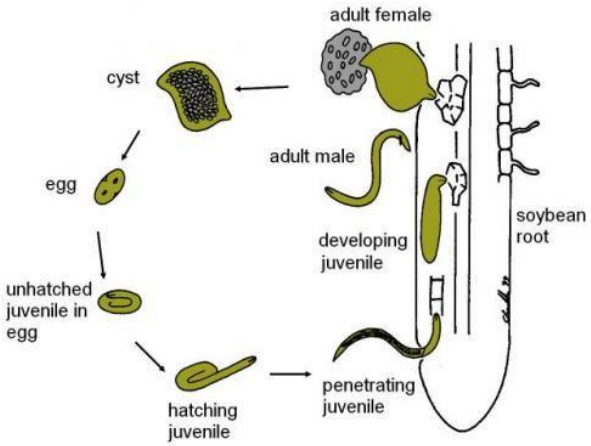
80. What is the most effective control for this invasive animal?

STATION P: Examine the information about this invasive animal and answer the questions.









76. Give the common and then the scientific name of this animal.

Soybean Cyst Nematode *(Heterodera glycines)*

77. Why type of damage does this animal cause?

It costs billions of damage to soybean crops by damaging the soybean plants

78. Once present in the soil, this animal can never be eliminated. (true or false)

True

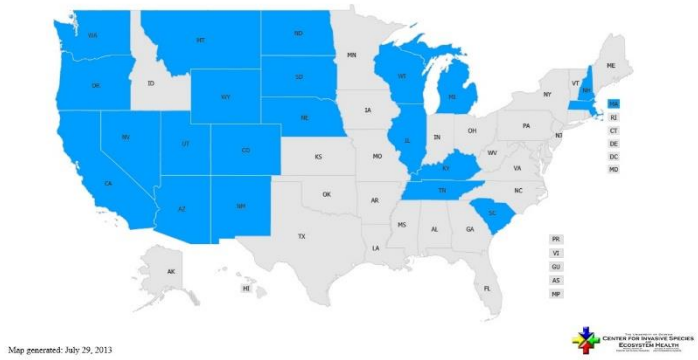
79. How is this animal detected?

Observation of adult females and cysts on the roots of soybean plants is the most accurate way to diagnose SCN infestation in the field. (A&B above)

80. What is the most effective control for this invasive animal?

Crop rotation coupled with planting SCN-resistant varieties of soybeans
There is a 6 year rotation scheme that is used

STATION Q: Examine the information about this invasive plant and answer the questions.



81. Give the common and then the scientific name of this plant.

82. How was this invasive plant introduced?

83. What damage does this invasive species do?

84. How has this invasive species spread to so many regions of the country?

85. What has been the most effective treatment for this invasive plant?

STATION Q: Examine the information about this invasive plant and answer the questions.

81. Give the common and then the scientific name of this plant.

Spotted Knapweed *(Centaurea stoebe)*

82. How was this invasive plant introduced?

Accidentally through contaminated seed in contaminated alfalfa and clover seed in the late 1800s or in the soil used as ballast for ships.

83. What damage does this invasive species do?

It invades a wide variety of habitats including pastures, open forests, prairies, meadows, old fields, and disturbed areas and displaces native vegetation and reduces the forage potential for wildlife and livestock

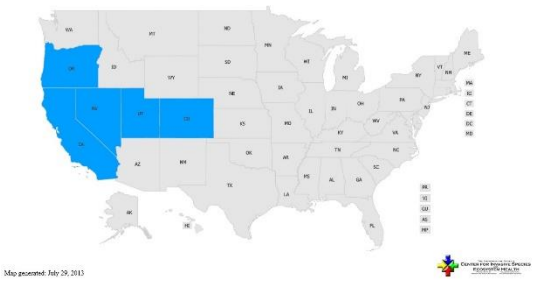
84. How has this invasive species spread to so many regions of the country?

A single plant can produce over 1,000 seeds. The seeds are wind dispersed, & can be dispersed by animals and birds and through the feces of birds and small rodents.. The seeds can remain viable in the soil for over 5 years and they can germinate in the spring through early fall in a wide range of soil depths, soil moisture contents and temperatures. It has few predators and are unpalatable to grazing animals. It can also produce a toxin called cnicin in its foliage and roots which retards the growth of surrounding plants, allowing it to spread more rapidly and form monocultures.

85. What has been the most effective treatment for this invasive plant?

Long-term grazing by sheep and goats has been found to control this invasive plant. Integrated controls include mechanical, biological, and chemical controls but they must be monitored as seeds remain viable for 5 years.

STATION R: Examine the information about this invasive plant and answer the questions.



86. Give the common and then the scientific name of this plant.

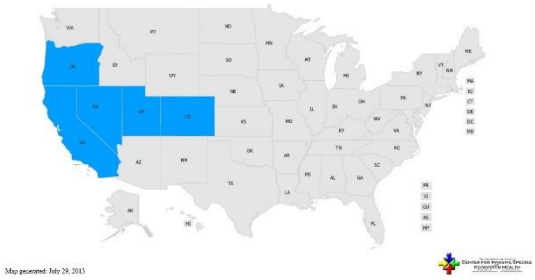
87. How does this invasive plant affect the land it invades?

88. Why is this grass considered a major problem?

89. What prevention methods are useful in keeping this invasive grass away?

90. What types of control methods are used?

STATION R: Examine the information about this invasive plant and answer the questions.



86. **Give the common and then the scientific name of this plant.**
    Medusahead *(Taeniatherum caput-medusae)*
87. **How does this invasive plant affect the land it invades?**
    The grazing capacity of land infested with medusahead can be reduced by up to 80%. Wildlife habitat and biodiversity also suffer, and the weed can eventually lead to alterations in ecosystem functions.
88. **Why is this grass considered a major problem?**
    It now occupies over 2.5 million acres of western United States rangelands and is estimated to be spreading at a rate of 12% per year. in the western USA
89. **What prevention methods are useful in keeping this invasive grass away?**
    Preventing introduction of seed: Vehicles and equipment, especially agricultural, construction and fire-fighting equipment, should be cleaned prior to moving from infested areas. Field workers should remove seeds from their clothing prior to leaving infested areas. Seeds are most commonly found in socks, trouser cuffs, shoelaces and shoe eyelets Transporting livestock from infested sites to uninvaded sites should be minimized,
    Maintain or increase biotic resistance: Proper grazing management is important for maintaining community biotic resistance.
90. **What types of control methods are used?**
    Prescribed burns of mature plants, spring plowing of young plants and graze management

STATION S: METHODS OF INVASION

For each species listed, choose the method of invasion that brought it to the U.S.

METHODS OF INVASION

A. Ballast water in ships

B. Timber – unprocessed wood

C. Economic purposes as fur trade

D. Misguided Environmental projects

E. Cultural Purposes

F. Aesthetic reasons

91. Kudzu

92. Asian shore crabs

93. Nutria

94. Zebra Mussel

95. Purple loosestrife

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91. Kudzu
D

92. Asian shore crabs
E

93. Nutria
F

94. Zebra Mussel
A

95. Purple loosestrife
F

STATION T: METHODS OF CONTROL

For each side effect, place the letter of the method of control to which it applies

METHODS OF CONTROL

A. BIOLOGICAL

B. CHEMICAL

C. PHYSICAL

D. PREVENTION

E. INTEGRATED PEST MANAGEMENT (IPM)

SIDE EFFECTS OF CONTROL METHODS

96. Apathy and Lack of Awareness

97. May miss removing some of the Invasive Species

98. Control can become invasive

99. May kill native species

100. May compound the effects of many methods

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For each side effect, place the letter of the method of control to which it applies

METHODS OF CONTROL

A. BIOLOGICAL

B. CHEMICAL

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SIDE EFFECTS OF CONTROL METHODS

96. Apathy and Lack of Awareness

D

97. May miss removing some of the Invasive Species

C

98. Control can become invasive

A

99. May kill native species

B

100. May compound the effects of many methods

E