

Top 50 Invasive Species in the West

Invasive species pose an enormous environmental challenge to western states and territories. Western Governors have experienced first-hand how these invaders affect the region's forests and rangelands, water, and agriculture. Left unchecked, invasive species permanently alter ecosystems and negatively impact the native species and local economies that depend upon them.

The Nature Conservancy has estimated that invasive species management costs over \$120 billion a year and affects more than 100 million acres – an area the size of California. Additionally, invasive species are estimated to have contributed to the decline of 42 percent of threatened and endangered species.

Land managers must combat a nearly limitless number of invading species with a limited amount of resources. In this environment, it is critical to have up-to-date information to plan and prioritize management decisions.

Individual states have developed invasive species risk assessments within their boundaries. Until now, however, no such list has existed for the western region.

The Western Governors' Association (WGA) has addressed this need by surveying invasive species coordinators in WGA member states and territories



No. 1 Terrestrial Invasive Species:
Salt cedar (tamarisk) (*Tamarix* spp.)



No. 5 Terrestrial Invasive Species:
Emerald Ash Borer
(*Agrilus planipennis*)



No. 19 Aquatic Invasive Species:
Nutria (*Myocastor coypu*)



No. 2 Aquatic Invasive Species:
Quagga and Zebra Mussel
(*Dreissena polymorpha*)

to develop the “Top 50 Invasive Species in the West.” The compilation of terrestrial and aquatic invasive species includes highly-publicized examples such as cheatgrass, Quagga Mussels, tamarisk and the Emerald Ash Borer. The list also encompasses less well known, but still impactful, examples such as leafy spurge, Red shiner, Russian knapweed, and Golden algae.

This first-of-its-kind risk assessment by WGA will enable state managers to better understand

the regional-level risks posed by terrestrial and aquatic invasive species and improve cross-boundary management actions. Additionally, this effort of WGA's Invasive Species Data Management Project will be used to populate the association's West-wide Invasive Species Risk Assessment, created to help guide future work to battle invasive species.



Terrestrial Invasive Species, from left: **No. 9 Johnsongrass** (*Sorghum halepense*); **No. 3 Canada thistle** (*Cirsium arvense* (L.) Scop.); **No. 8 Leafy spurge** (*Euphorbia esula*); **No. 2 Cheatgrass** (*Bromus tectorum*)

Top 25 Terrestrial Invasive Species in the West

1. Salt cedar (tamarisk) (*Tamarix* spp.)
2. Cheatgrass (*Bromus tectorum*)
3. Canada thistle (*Cirsium arvense* (L.) Scop.)
4. Hoary cress (*Cardaria draba*)
5. Emerald Ash Borer (*Agrilus planipennis*)
6. Feral Hog (*Sus scrofa*)
7. Russian olive (*Elaeagnus angustifolia* L.)
8. Leafy spurge (*Euphorbia esula*)
9. Johnsongrass (*Sorghum halepense*)
10. European starling (*Sturnus vulgaris*)
11. Giant Reed (*Arundo donax*)
12. Russian knapweed (*Acroptilon repens*)
13. Feral (or spay-neuter-release) Cat (*Felis domesticus*)
14. Perennial Pepperweed (*Lepidium latifolium*)
15. White nose syndrome
16. Yellow starthistle (*Centaurea solstitialis*)
17. Knotweeds (*Polygonum* sp.)
18. Sericea lespedeza (*Lespedeza cuneata*)



19. Coqui frog (*Eleutherodactylus coqui*)
20. Purple loosestrife (*Lythrum salicaria* and *L. virgatum*)
21. Scotch thistle (*Onopordum acanthium*)
22. Dyer's woad (*Isatis tinctorial* L.)
23. Flowering rush (*Botomus umbellatus*)
24. Reed canary-grass (*Phalaris arundinacea*, the introduced genotype)
25. Little fire ant (*Wasmannia auropunctata*)

Top 25 Aquatic Invasive Species in the West



Aquatic Invasive Species, clockwise from left: **No. 5 Curly-leaved pondweed** (*Potamogeton crispus*); **No. 8 Purple loosestrife**; *Lythrum salicaria*; **No. 1 Eurasian Watermilfoil** (*Myriophyllum spicatum*); **No. 14 Rusty crayfish** (*Orconectes rusticus*)



1. Eurasian Watermilfoil (*Myriophyllum spicatum*)

2. Quagga and Zebra Mussel (*Dreissena polymorpha*)

3. New Zealand mudsnail (*Potamopyrgus antipodarum*)

4. Asian Clam (*Corbicula fluminea*)

5. Curly-leaved pondweed (*Potamogeton crispus*)

6. Silver carp (*Hypophthalmichthys molitrix*)

7. Northern pike (*Esox lucius*)

8. Purple loosestrife; *Lythrum salicaria*

9. Hydrilla (*Hydrilla verticillata*)

10. Whirling disease (*Myxobolus cerebralis*)

11. Common carp (*Cyprinus carpio*)

12. American bullfrog (*Lithobates catesbeianus*)

13. Bighead Carp, *Hypophthalmichthys nobilis*

14. Rusty crayfish (*Orconectes rusticus*)

15. Brazilian elodea (*Egeria densa*)

16. Nonnative crayfish (*Orconectes* spp., *Procambarus clarkii*)

17. Golden algae (*Prymnesium parrum*)

18. Didymo (*Didymosphenia geminata*)

19. Nutria (*Myocastor coypu*)

20. White Perch (*Morone americana*)

21. Grass Carp (*Ctenopharyngodon idella*)

22. Water Hyacinth (*Eichornia crassipes*)

23. Red shiner (*Cyprinella lutrensis*)

24. Phragmites Common Reed (*Phragmites australis*)

25. Western Mosquitofish (*Gambusia affinis*)



No. 6 12 Aquatic Invasive Species: American bullfrog (*Lithobates catesbeianus*).

Western Governors' Association Invasive Species Data Management Project

Western Governors' Association staff surveyed invasive species coordinators in member states and territories in 2017 to rank the top-priority invasive species as part of WGA's Invasive Species Data Management Project. Participants were asked to rank their states' top-15 most impactful and potentially impactful terrestrial and aquatic invasive species.

The responses were then compiled into a top-25 list for each category for the western region. Responses are weighted by their relative rank, with the most impactful species in a state or island being given 15-points, the second most impactful being given 14 points, etc.

As of December 12, 2017, WGA had received 30 responses. State participation is as follows:

Terrestrial survey participants:

Alaska, California, Colorado, Hawaii, Montana, North Dakota, Nebraska, New Mexico, Nevada, Oklahoma, South Dakota, Texas, Washington, Wyoming.

Aquatic survey participants:

Alaska, Arizona, California, Colorado, Montana, North Dakota, Nebraska, New Mexico, Nevada, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, Wyoming.



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