

# Aquatic Plants

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## Overview



## Climate Change

# Problem Plants

## Noxious Aquatic/Riparian Weeds in Oregon

- "A" list
  - *Hydrilla verticillata* -hydrilla
  - *Trapa natans* -water chestnut
  - *Heracleum mantegazzianum* - Giant hogweed (T)
  - *Spartina* spp. cordgrasses (T)
- "B" list
  - *Egeria densa* - brazilian elodea
  - *Myriophyllum spicatum* - eurasian watermilfoil
  - *Polygonum cuspidatum* - japanese knotweed
  - *Lepidium latifolium* - perennial pepperweed
  - *Lythrum salicaria* - purple loosestrife (T)
  - *Cyperus esculentus* - yellow nutsedge
  - *Tamarix ramosissima* - salt cedar
  - *Iris pseudocarus* - yellow flag iris
- Non-listed
  - *Cabomba caroliniana*
  - *Potamogeton crispus*
  - *Myriophyllum aquaticum*
  - *Eichhornia crassipes*
  - et al.



# *Myriophyllum spicatum*



QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.



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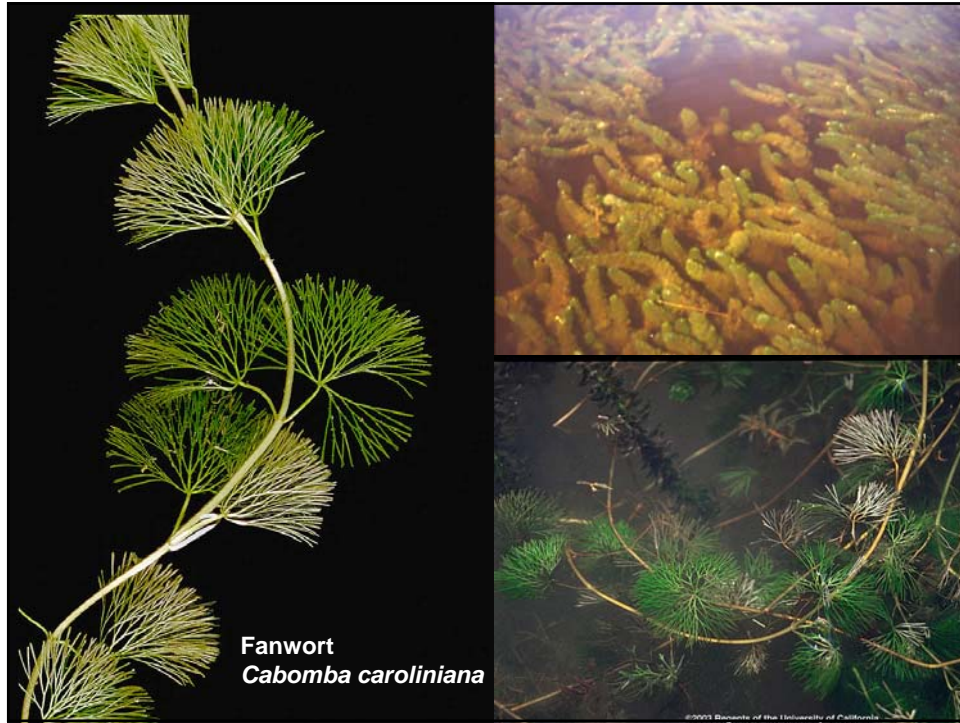


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## Parrotfeather *Myriophyllum aquaticum*



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## *Egeria densa*



Similarities in the Hydrocharitaceae make detection difficult



*Hydrilla verticillata*

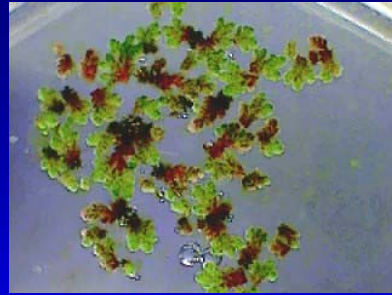


*Lagarosiphon major*

QuickTime™ and a  
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*Azolla filiculoides* / *A. mexicana*



*A. pinnata*  
Federally listed noxious weed

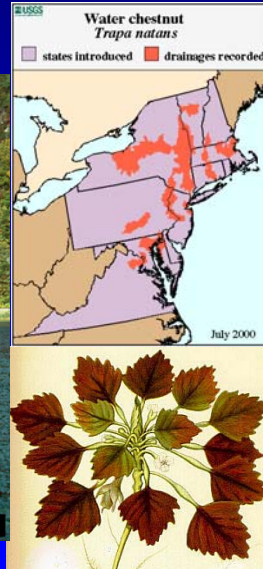


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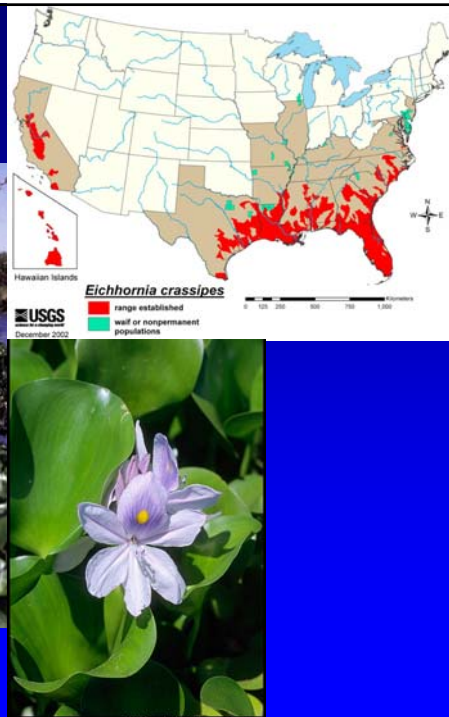
# *Trapa natans* (Water chestnut)



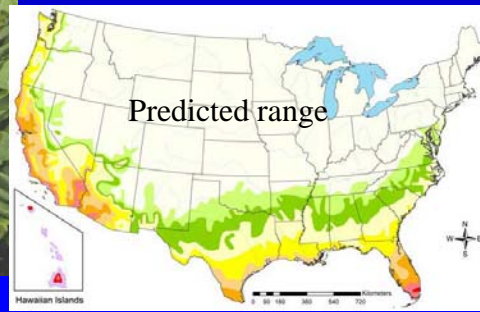
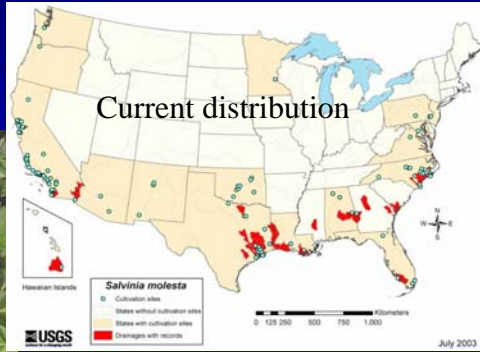
UCA3970056



# *Eichhornia crassipes*



## *Salvinia molesta*



## *Nymphaea odorata*









Purple loosestrife (*Lythrum salicaria*)

Knotweeds (*Polygonum cuspidatum*)

**Purple Loosestrife and Introduced Biological Control Agents**

*Nanophyes marmoratus*

*Galiumella* spp.

*Hylotinus transsylvanicus*

slides courtesy Oregon State, Corvallis



Cordgrasses - *Spartina alterniflora*, *S. densiflora*,  
*S. anglica*, *S. patens*



## Oregon's *Spartina* Response Plan


Think you've seen Spartina in Oregon?

- Spartina species are native to the Pacific Northwest. They are common in coastal areas and can grow in places as diverse as salt marshes and dunes.
- Early planting, or at a late stage of invasion, may lead to the loss of the native Spartina species.
- Spartina species are listed as S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17, S18, S19, S20, S21, S22, S23, S24, S25, S26, S27, S28, S29, S30, S31, S32, S33, S34, S35, S36, S37, S38, S39, S40, S41, S42, S43, S44, S45, S46, S47, S48, S49, S50, S51, S52, S53, S54, S55, S56, S57, S58, S59, S60, S61, S62, S63, S64, S65, S66, S67, S68, S69, S70, S71, S72, S73, S74, S75, S76, S77, S78, S79, S80, S81, S82, S83, S84, S85, S86, S87, S88, S89, S90, S91, S92, S93, S94, S95, S96, S97, S98, S99, S100.

**Don't let invasive non-grasses get a foothold in Oregon!**

Report suspect sites to Oregon Department of Agriculture Invasive Species Control Program, 503-946-8122 or 484-6122

**1-866-INVAADER**



Invasive Cordgrass  
*Spartina* species  
ESTUARINE INVADERS!

**SPARTINA DISPERSAL STUDY CARD # 10409**



SPARTINA DISPERSAL STUDY CARD # 10409

For more information, visit [www.oregon.gov/ODA/InvasiveSpecies/SPARTINA](http://www.oregon.gov/ODA/InvasiveSpecies/SPARTINA)

Phone: 503-946-8122

Thank you for your participation!

- Regular early-detection surveys of 15 estuaries
- Rapid response
- Education & Outreach
  - Humboldt Bay focus
- Research
  - propagule dispersal on ocean currents
  - rhizome survival

## Collaboration with USGS on NAS Database



- Entering new occurrence records – updating records for the PNW & nationwide
- Sending out NAS Alerts
- Creating/updating fact sheets
- Adding photos & references





Myriophyllum spicatum

Interactive map: Continental US, Alaska, Hawaii, Caribbean



*Glycyrrhiza maxima*

Common Name: Licorice plant

Typology and Other Names: *Glycyrrhiza spicata* Hart, & Kuhn, *Glycyrrhiza maxima* Hartman

Typology: available through 

Identification: Glycyrrhiza maxima is a perennial, rhizomatous grass with upright culms that can grow up to 2.5 m high. Leaf sheaths have prominent midribs, while transverse veins, and are closed to near the top. The glabrous, pubescent blades are 2.5 to 4.5 cm long, smooth and glaucous in shape. Leaf blades are flat, 20-40 cm long and 0.5-2.0 cm wide. The leaf blades are shallowly grooved, with prominent midribs. The leaf margins have short, stiff hairs that are rough to the touch.

The plants are biennial. The inflorescence is a panicle. The inflorescence can be open (phanogamous) or contracted and terminal. The inflorescence branches have short, stiff hairs, similar to those on the leaf margins.

Native Range: *Glycyrrhiza maxima* is native to temperate Eurasia.



S. Miller, ODA





## Impacts

Temperature  
Flow  
Habitat  
Recreation  
Water quality

From: Economic Analysis of  
Containment Programs,  
Damages, and Production  
Losses from Noxious Weeds in  
Oregon  
(ODA 2001)

	acres	\$	\$/acre
Current weeds			
Yellowstar thistle	1873407	3,416,849	1.82
Knapweedds	3622380	6,083,434	1.68
Leafy spurge	12700	44,328	3.49
White top/Perennical pepper weed	2322187	94,577,672	40.73
Scotch thistle	1011134	1,896,577	1.88
Med. Sage	1275077	837,666	0.66
hawkweeds	600	575	0.96
Tansy ragwort	3260000	5,826,638	1.79
Rush skeletonweed	2000000	4,605,000	2.30
Scotch broom	16000000	14,221,200	0.89
Gorse	300000	297,261	0.99
Purple loosestrife	3646	1,482,695	406.66
Egeria	90000	3,538,860	39.32
Potential invaders			
Spartina	12800	8,525,584	666.06

## What is Needed

- Management
  - Surveys for Early Detection!
  - Rapid Response Plan for New Invaders
    - Hydrilla and Spartina Response Plans
  - Whole-basin Perspective on Milfoil Management
- Research
  - Nontarget Impacts of Chemical and Nonchemical Management Efforts
  - Nonchemical alternatives for management
    - Ongoing work in Lk Roosevelt
  - Biology and Ecology
    - What can we expect in 20 years with climate change?

The End

