

PRISM
 (New York Partnerships for Regional Invasive Species Management)
NON-NATIVE PLANT INVASIVENESS RANKING FORM

PRISM: Long Island Invasive Species Management Area

Scientific name: Lythrum salicaria L. USDA Plants Code: LYSA2
 Common names: Purple Loosestrife
 Native Distribution: Eurasia
 Date Assessed: 25 February 2008
 PRISM Assessors: Steve Glenn
 PRISM Reviewers: LIISMA SRC
 Date Approved: 21 April 2008 Form version date: 13 April 2009
 New York Relative Maximum score: 91.00 Date NY assessment approved: 21 April 2008
 New York State Invasive Rank: Very High

SUMMARY OF PRISM RANKING RESULTS:

Distribution: Widespread
Estimated number of infested sites: 25+
PRISM Invasiveness Rank[§]: Very High



A. DISTRIBUTION AND ABUNDANCE (KNOWN/POTENTIAL):

1. What is the species distribution and abundance in the PRISM?

- | | |
|--|-------------|
| A. Not present | Not Present |
| B. Occurs in three or fewer natural areas (locations that are at least ¼ mile apart) with no infested area* >1 acre or containing >100 individuals | Restricted |
| C. Present in 4–10 natural areas, or with one occupied location >1 acre or containing >100 individuals | Common |
| D. Present in >10 minimally managed areas | Widespread |
| U. Unknown | Unknown |

Answer: Widespread

Describe distribution:
 Queens County to eastern Suffolk County
 Sources of information:
 Brooklyn Botanic Garden. 2008.

[§]Not Assessable: not persistent in the PRISM, or not found outside of cultivation.

*Definition of “infested area” is the “...actual or percentage of land occupied by [canopy cover of] weed plants”
 NAWMA (North American Weed Management Association) 2002. North American Invasive Plant Mapping Standards (see <http://www.nawma.org/>).

PRISM
(New York Partnerships for Regional Invasive Species Management)
NON-NATIVE PLANT INVASIVENESS RANKING FORM

2. What is the likelihood the species will occur (if not yet present) or expand its distribution and abundance (if already present) in the PRISM?

Answer:

Documentation (e.g.: history of establishment in PRISM, suitability of habitats and climate, distribution models, literature, expert opinions):
Literature
Sources of information:
Thompson, Daniel Q., et al.. 1987.

B. INVASIVENESS RANK IN THE PRISM:

Is the species distribution Widespread or Common?

Yes: Go to column A in table below.

No: What is the likelihood of species occurrence or expansion? Answer:

- Very Likely: Use column A below
- Moderately likely: Use column B below
- Unlikely: Use column C below
- Zero likelihood Invasive potential Insignificant
- Unknown Invasive potential Unknown
- Not assessed Invasive potential not assessed

Assign a PRISM invasiveness rank to the species based on its New York Relative Maximum Score, using the designated column in the table below.

New York Relative Maximum Score	New York Invasiveness Rank	A	B	C
> 80.00	Very High	VH	H	M
70.00–80.00	High	H	M	L
50.00–69.99	Moderate	M	L	Ins
40.00–49.99	Low	L	Ins	Ins
<40.00	Insignificant	Ins	Ins	Ins

Column used: A (Insert PRISM Invasiveness Rank on page 1)

References for species assessment:

Albright, M. F. et al. 2004. Recovery of native flora and behavioral responses by *Galerucella* spp. following biocontrol of purple loosestrife. *Amer. Midl. Nat.* 152:248-254.

Bender, J., [updated by Rendell, J.]. 1987. Element stewardship abstract for *Lythrum salicaria*. The Nature Conservancy, Arlington, VA.

Brooklyn Botanic Garden. 2008. AILANTHUS databse. (accessed 25 February 2008).

Brown, C. J. et al. 2006. Invasive plant and experimental venue affect tadpole performance. *Biological Invasions* 8: 327-338.

Brown, W. T. et al. 2001. Volunteer monitoring of nonindigenous invasive plant species in the Adirondack Park, New York, USA. *Natural Areas Journal* 21: 189-196.

PRISM
(New York Partnerships for Regional Invasive Species Management)
NON-NATIVE PLANT INVASIVENESS RANKING FORM

- Fickbohm, S. S. & W. X. Zhu. 2006. Exotic purple loosestrife invasion of native cattail freshwater wetlands: Effects on organic matter distribution and soil nitrogen cycling. *Applied Soil Ecology* 32: 123-131.
- Gratton, C. 2006. Interactions between a native Silkmoth *Hemileuca* sp and an invasive wetland plant, *Lythrum salicaria*. *Ann. Entomol. Soc. Amer.* 99: 1182-1190.
- Grevstad, F. S. 2006. Ten-year impacts of the biological control agents *Galerucella pusilla* and *G. calmariensis* (Coleoptera: Chrysomelidae) on purple loosestrife (*Lythrum salicaria*) in Central New York State. *Biological Control* 39:1-8.
- Henne, D. C. et al. 2005. An integrated management strategy for the control of purple loosestrife *Lythrum salicaria* L. (Lythraceae) in the Netley-Libau Marsh, southern Manitoba. *Biological Control* 32: 319-325.
- Houghton-Thompson, J. et al. 2005. Evidence of hybridization between *Lythrum salicaria* (Purple Loosestrife) and *L. alatum* (winged loosestrife) in North America. *Ann. Bot. (London)* 96: 877-885.
- Konisky, R. A. & D. M. Burdick. 2004. Effects of stressors on invasive and halophytic plants of New England salt marshes: A framework for predicting response to tidal restoration. *Wetlands* 24: 434-447.
- Mahaney, W. M. et al. 2006. Impacts of *Lythrum salicaria* invasion on plant community and soil properties in two wetlands in central New York, USA. *Canad. J. Bot.* 84: 477-484.
- Mal, T. K. & J. Lovett-Doust. 2005. Phenotypic plasticity in vegetative and reproductive traits in an invasive weed, *Lythrum salicaria* (Lythraceae), in response to soil moisture. *Amer. J. Bot.* 92: 819-825.
- Mills, E. L. et al. 1996. Exotic species in the Hudson River Basin: a history of invasions and introductions. *Estuaries* 19: 814-823.
- Mullin, B. H. 1998. The biology and management of purple loostrife (*Lythrum salicaria*). *Weed Tech.* 12: 397-401.
- Nagel, J. M. & K. L. Griffin. 2004. Can gas-exchange characteristics help explain the invasive success of *Lythrum salicaria*? *Biological Invasions* 6:101-111.
- New York Flora Association. 2008. New York Flora Atlas. <<http://atlas.nyflora.org/>> (accessed 25 February 2008).
- Perring, F. H. & S. M. Walters (eds.). 1962. Atlas of the British flora. Nelson, London.
- Rawinski, T. J. 1982. The ecology and management of purple loosestrife (*Lythrum salicaria* L.) in central New York. M.S. Thesis, Cornell Univ., Ithaca, NY.
- Shamsi, S. R. A. & F. H. Whitehead. 1974. Comparative eco-physiology *Epilobium hirsutum* L. and *Lythrum salicaria* L. I. General biology, distribution and germination. *J. Ecol.* 62:279-290.
- Strayer, D. L. et al. 2005. Interactions between alien species and restoration of large-river ecosystems. *Archiv fuer Hydrobiologie Suppl.* 155: 133-145.
- Thompson, D. Q., et al. 1987. Spread, Impact, and Control of Purple Loosestrife (*Lythrum salicaria*) in North American Wetlands. U.S. Fish and Wildlife Service. 55 pages. Jamestown, ND: Northern Prairie Wildlife Research Center Online. <<http://www.npwr.usgs.gov/resource/plants/loosstrf/index.htm>> (Version 04JUN1999). (accessed 25 February 2008)
- United States Department of Agriculture. 2008. The PLANTS Database. National Plant Data Center, Baton Rouge, LA <<http://plants.usda.gov>> (accessed 25 February 2008)

PRISM
(New York Partnerships for Regional Invasive Species Management)
NON-NATIVE PLANT INVASIVENESS RANKING FORM

Welling, C. H. & R. L. Becker. 1990. Seed bank dynamics of *Lythrum salicaria* L.: implications for control of this species in North America. *Aquatic Bot.* 38: 303-309.

Yakimowski, S. B. et al. 2005. Limits and effects of invasion by the nonindigenous wetland plant *Lythrum salicaria* (purple loosestrife): a seed bank analysis. *Biological Invasions* 7: 687-698.

Citation: This ranking form for regions within NYS may be cited as: Jordan, M.J., G. Moore and T.W. Weldy. 2008. Invasiveness ranking system for non-native plants of New York. Unpublished. The Nature Conservancy, Cold Spring Harbor, NY; Brooklyn Botanic Garden, Brooklyn, NY; The Nature Conservancy, Albany, NY. Note that the order of authorship is alphabetical; all three authors contributed substantially to the development of this protocol.

Acknowledgments: Valuable contributions by members of the Long Island Invasive Species Management Area's Scientific Review Committee were incorporated in revisions of this form.