WRITTEN FINDINGS OF THE
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD
July 1997

Scientific Name: *Lythrum salicaria* L.

Common Name: Purple loosestrife

Family: Lythraceae

Legal Status: Class B:

(a) regions 1,4,7,8
(b) region 2 except Snohomish County.
(c) region 3 except within 100 feet of the ordinary high water mark of the Okanogan River from the Canadian border south to Riverside.
(d) Grays Harbor, Mason, Kitsap and Thurston Counties of region 5.
(e) Those portions of King County lying north of I-90 and east of the line extending from SR 522 to SR 202 to E. Lake Sammamish parkway; west of I-5 including Vashon Island; south of I-90 and east and south of I-405 to the county line.
(f) Pierce County, except those areas lying within T20, 21, 22N, R1W and R1E, all sections.
(g) region 6 except that portion of Grant County lying northerly of the Frenchmen Hills-O'Sullivan Dam Road, southerly of I-90, easterly of the section line of the location of County Rd. J SW/NW if constructed and westerly of the section line of the location of county Rd. H SE/NE if constructed.
(h) region 9 except Benton County.
(i) region 10 except Walla Walla County.
(j) Intercounty Weed Districts No. 51 and No. 52.

Description and Variation: Purple loosestrife is a perennial, emergent aquatic plant (Thompson, et al. 1987; Malecki, 1991) As many as 30 -50 herbaceous, erect, annual stems rise to about 9 feet tall, from a persistent perennial tap root and spreading rootstock. Short, slender branches spread out to form a crown 5 feet wide on established plants. (Thompson, et al. 1987). The somewhat squarish stems are 4 to 6 sided, with nodes evenly spaced. Stems submerged under water develop aerenchyma tissue characteristic of aquatic plants. The stalkless leaves can be opposite or decussate (opposite with alternating pairs at 90 degree angles)or sometimes in whorls of three, near the base. The upper leaves and floral bracts can be alternate (Mal, et al. 1992). The leaves are 1 ½ to 4 inches long, wider and rounded or heart-shaped at the base. Leaf shape varies from lanceolate to narrowly oblong, and is sometimes covered with fine hairs. The variability in pubescence and leaf

shape is influenced by light levels - leaf area increases and fine hairs decrease with lower light levels.

The showy, magenta flowering stems end in a 4-16 inch flowering spike. Flowers appear from July to early October. The (usually) magenta flowers are in pairs or clusters of the upper leaf axils. Each flower is complete, containing 5 - 7 petals, with the same number of sepals as petals, and twice as many stamens as petals. Typical flowers have six sepals, six petals and twelve stamens. The ovary is superior, with two fused carpels. The narrow, wrinkled petals are from 1/4 to 5/8 inch long. The petal color can range from white to pink to red to purple. The fruit is a two-valved capsule enclosed in the pubescent calyx. The pollen grain color and size varies, depending on the style length of the flower.

The species is heterostylous. Each flower exhibits one of three style lengths (tristylous). The flowers are categorized as short-styled (with medium and long stamens), medium-styled (with short and long stamens) or long-styled (with short and medium stamens). Individual plants produce only one style-type (Haber 1996). Evidence shows that the ratio is 1:1:1 in wild populations, where disturbance is minimal, suggesting the importance of sexual reproduction in *L. salicaria*. This ratio is altered when disturbed populations result from vegetative spread. (Thompson et al 1987) The flowers are self-incompatible and are insect pollinated (Malecki 1991) and also pollinated by several different types of bees and butterflies (Element Stewardship Abstract the Nature Conservancy).

Lythrum salicaria is believed to be a well defined, albeit variable, species. (Thompson, et al. 1987).

Lythrum is one of 22 genera of the loosestrife family, Lythraceae. 500 species include herbs, shrubs and trees found in worldwide distribution, with an abundance in the American tropics. 12 species are found in the continental United States (Shinners 1953) with 3 species being exotic, or introduced. They are *Lythrum hyssopifolia, L. salicaria and L. virgatum* Although *L. hyssopifolia* is an annual weed found in clover seed and lucerne, there are no reports of this species as an agricultural weed.

Economic Importance: *Beneficial*:
Beekeepers consider the late season flowers of purple loosestrife as a source of nectar and pollen for overwintering colonies of bees. (Pellet 1977; Hayes 1979 as cited in Malecki 1991). An estimated loss of $1.3 million in honey sales in 19 states (over the next 20 years) is attributable to purple loosestrife control. (Thompson et al. 1987). However, if native wetland plants are allowed to reestablish habitat, they would once again provide replacement forage for bees (Malecki 1991). The *American Bee Journal* acknowledges the threat to wetland habitats from purple loosestrife in publication and press releases (Thompson et al. 1987).

As a horticultural plant, purple loosestrife is familiar to gardeners worldwide. European garden books mention the beauty of this species far back into the Middle Ages. *L. salicaria* is one species derived from Old English gardens from the 17th century (Thompson et al. 1987). During the mid 1900's the nursery industry developed and sold varieties and cultivars thought to be sterile (Lindgren and Clay 1993). Disagreement and confusion over infertility and taxonomy questions

led to requests from the Minnesota nursery industry to stop producing non-native *Lythrum* varieties. (Rendall 1986 as cited in Malecki 1991). *Lythrum salicaria* is a listed noxious weed in several states including Illinois, Minnesota, Ohio, Wisconsin and Washington. (Malecki 1991) In Washington state, purple loosestrife was placed on the Washington State Department of Agriculture Quarantine list under Wetland and Aquatic Weeds in 1991. The sale of all hybrids and cultivars is also prohibited.

Medicinal uses for purple loosestrife date back to the 1st century (Stevens 1961 as cited in Thompson 1987). The generic name, *Lythrum,* is derived from the Greek root for blood, and herbal references mention the astringent or styptic properties. Tonics made from flowering branches, leaves and roots treated ailments that included dysentery, internal and external bleeding and healing of wounds and ulcers. (Thompson et al. 1987).

The red-winged blackbird will nest in purple loosestrife stands. The long-billed marsh wren, the major factor in red-winged blackbird nesting mortality, avoids purple loosestrife This avoidance creates a safe nesting site for the blackbirds. Purple loosestrife seeds are not considered part of the diet of the red-winged blackbird. (Balogh 1986).

Economic Importance: *Detrimental*:
The negative impact from purple loosestrife establishment in wetland habitat far outweighs any economic gain from horticultural or medicinal uses (Blossey and Schroeder 1992, Thompson et al. 1987).

Wetland ecosystems are altered. Purple loosestrife is invasive and competitive and unavailing to native wildlife. It can quickly adapt to environmental changes and expand its range to replace native plants used for ground cover, food or nesting material. Loosestrife stands are dense at the top, and open at the base. Structures of root masses create a 3 foot opening, in the water, between plants. This provides no cover for nesting ducks. (Timmerman 1992). Large loosestrife infestations are hard to mow and manage. Recreational hunting or trapping grounds are lost, decreasing the land value to those that own or manage operational wetlands.

Threatened and endangered species, including plants in Massachusetts and New York and the bog turtle in the northeastern US, are impacted by monotypic stands of purple loosestrife that replace native vegetation.

Agriculture is also impacted by a loss of wild meadows, hay meadows and wetland pastures. While not a threat to cultivated crop lands, purple loosestrife is raising concern in areas where wild rice is cultivated in northern California (Blossey and Schoreder 1992). When purple loosestrife invades irrigation systems, economic losses to agriculture can exceed $2.6 million annually. (Malecki 1991).

Habitat:

Purple loosestrife occurs in freshwater and brackish wetlands. It is a successful colonizer and potential invader of any wet, disturbed sites in North America. Associated species include cattails, rushes, sedges and reeds.

Geographic Distribution:

Europe and Asia are thought to be the geographic origin of purple loosestrife. The European populations cover the greatest range. The main islands of Japan are the core of the Asian native range. *L. salicaria* is now circumpolar in the northern hemisphere, and the distribution range also includes other temperate and subtropical areas, including: eastern Africa, Australia, Tasmania and New Zealand. (Thompson et al. 1987).

In the mid to late 1800's, *L. salicaria* traveled to northeastern port cities as ship ballast from European tidal flats. When this ballast was dumped for the return trip to Europe, a major seed source remained along the eastern seabord. (Stuckey 1980 as cited in Wilcox; Thomspon et al. 1987 as cited in Wilcox). For the next 100 years it was a pioneer species while it acclimated to the northeastern seaboard and the St. Lawrence seaway. (Henderson 1987)

A survey of an east-west highway corridor in New York state (I-90) showed a purple loosestrife population density gradient that indicates an east-to-west migration route. This research supports both that loosestrife worked its way out west from the eastern states, and that the modern highway system, with disturbance and seed-carrying capacity, plays a part of that distribution. This is a short-distance migration. The wind currents created by traffic and the disturbance created from highway construction and maintenance moves purple loosestrife populations through nearby waterways or drainage systems. (Wilcox)

History:

Lythrum salicaria derived it's name from a Greek medical man in Nero's Roman army when he called the plant Lytron, Greek for blood. Awareness of the medicinal properties or the flowering spike resemblance to blood or gore from a wound led to the name. The similarity of loosestrife leaves to those of the willow (*Salix* spp.) resulted in the species name of *salicaria.* (Balogh 1986).

The first North American record of purple loosestrife was in wet Canadian meadows and in New England, as recorded in Pursh's Flora Americae Septentrionalis, in 1814. (Louis-Marie 1944 *as cited in* Balogh 1986). It was first recorded as a problem weed in Quebec in the 1930's. By 1942, a pasture that at one time supported 800 head of cattle was declared useless. (Balogh 1986).

Purple loosestrife was first collected in 1929 from Lake Washington, whose western shore borders Seattle. The first collection from eastern Washington was in the 1940's, from Spokane County, although there are reports of purple loosestrife escaping from a garden into the Spokane River ten years earlier.

The largest purple loosestrife infestation in Washington covers an estimated 23,000 desert wetland acres in the Winchester and Frenchman Hills wasteways of Grant County. Purple loosestrife was

first noticed in the area in the 1970's. In less than 20 years purple loosestrife invaded this new 55,000 desert wetland habitat and established a monoculture. (Sorby 1991)

Growth and Development:

Purple loosestrife is a perennial, emergent aquatic plant that grows from a persistent tap root and spreading root stock. The taproot develops early in the seedling stage. When mature the taproot and major root branches become thick and woody. (ESA-TNC). The stems are annual, and they can reach 9 feet tall and form a crown that can reach 5 feet wide.

Seed Germination: Critical temperatures at the soil surface necessary for germination are between 15 and 20 degrees Centigrade. These temperature requirements may be the southern limiting factors in the distribution of purple loosestrife. Light requirements (day length) does not affect germination rates. Purple loosestrife tolerates a broad pH range, with successful germination occurring between pH of 4.0 and 9.1. (Shamsi and Whitehead 1974 as cited in Thompson, et al. 1987). Under favorable conditions germination to flowering can occur in 8 - 10 weeks. Spring-germinated seedlings have a higher survival rate than summer-germinated seedlings. (ESA - The Nature Conservancy), and seedling establishment is higher when seeds overwinter at least one year. Seedling establishment requires moist soils.

Seed Viability: Seed dry stored and refrigerated, germinated after three years. No such study was done on propagules. The lack of energy reserves in the seed suggests that viability in the field would not last more than a few weeks (Thompson et al. 1987). More study needed.

The longevity of monotypic stands can be attributed to the unknown genetics of the European stock as compared to North American stock. A possibility exists that the North American forms are more adaptive and vigorous.

Reproduction:

Seed Production and Dispersal: A mature plant can produce 2.7 million thin-walled, flat seeds. The indeterminate flowering stalks produce and dehisce seed from the lowest capsules first while the upper capsules are still immature and green. The seeds lack endosperm, are about 400 x 200 microns - the size of ground pepper. Some seeds sink in the water, and resurface after germination. Water dispersal includes floating seedlings and floating ungerminated seeds. The seeds are small and light enough (weight 0.5 - 0.6 mg) for wind dispersal, but the evidence points toward minimal wind distribution. Most dispersal is down slope, and not downwind. Seedling densities sharply fall within 34 feet of the parent plant. Other distribution methods include transport through wetland mud by animals, humans, boats or vehicles. Spread also occurs when seeds are eaten. (Thompson et al. 1987)

Purple loosestrife also spreads vegetatively. Buried stems harbor adventitious buds with the ability to produce shoots or roots. Disturbance to the plant, such as stomping and breaking underground stems, or breaking off stems or roots during incomplete plant removal, does initiate bud growth.

Response to Herbicide:

Herbicide application in or near water requires approval by the Washington State Department of Ecology.

Response to Cultural Methods:
Cutting alone is not a control option for purple loosestrife. Shoots and adventitious roots will develop. Cutting late in the season reduced shoot production more than mid summer cutting, indicating that carbohydrate reserves could not be restored for next years growth.

Flooding is only recommended for large infestations because of the problems associated with maintaining constant water levels and because of the negative impacts to native plants (Malecki and Rawinski 1985).

Black plastic covering did not kill the roots of mature plants in test plots, although it did slow down growth and seed production. However, root crowns did die in plots where heavy litter from mowing remained covered until June. More study needed. (Washington Dept. of Wildlife PLS 1992 Activity Report).

Biocontrol Potentials:
In 1992 three beetles were released in Washington. Their damaging impact on purple loosestrife populations was evident in the Winchester Wasteway area of Grant County in 1997. Biological control agents may provide the long term success in controlling this noxious weed.

Galerucella calmariensis and *G. pusilla* - both leaf-feeding chrysomelids. These beetles defoliate, and attack the terminal bud area, drastically reducing seed production. The mortality rate to purple loosestrife seedlings is high. Evidence of *Galerucella* ssp. damage are round holes in the leaves. 4-6 eggs are laid on the stems, axils or leaf underside. The larvae feed constantly on the leaf underside, leaving only the thin cuticle layer on the top of the leaf. By 1996 populations of *Galerucella* ssp. visibly impacted purple loosestrife stands in the Winchester Wasteway.

Hylobius transversovittatus - root-mining weevil that also eats leaves. This beetle eats from the leaf margins, working inward. The female crawls to the lower 2-3 inches of the stem then bores a hole to the pithy area of the stem, where 1 -3 eggs are laid daily from July to September. Or, the female will dig through the soil to the root, and lay eggs in the soil near the root. The larvae then work their way to the root. *H. transversovittatus* damage is done when xylem and phloem tissue are severed, and the carbohydrate reserves in the root are depleted. Plant size is greatly reduced because of these depleted energy reserves in the root. The larvae evidence is the zig-zag patterns in the root.

Several other biological control agents are being studied for release:
Nanophyes marmoratus - a seed eating beetle. Young adults feed on new leaves on shoot tips, later feeding on the flowers and closed flower buds. 60 - 100 eggs are laid in the immature flower bud. Seed production is reduced by 60%. There were two test sites releases in 1996.
N. marmoratus is being propagated at WSU, Pullman, to increase their numbers. A possible field release is planned in 1998.

N. brevis - is another seed beetle that attacks the seed capsules. They have not been released in the United States yet. (Piper, 1997).
N. brevis and *Bayeriola salicariae* were studied and screened between 1990 and 1992. (Blossey and Schroeder, 1992).

References:

*Anderson, M. 1995. Interactions Between *Lythrum salicaria* and Native Organisms: A Critical Review. Environmental Management, Vol. 19 (2), pp 225-231.

*Anderson, N. and P. Ascher. 1992. Male and female fertililty of loosestrife (*Lythrum*) cultivars. Unpublished. 34 pp.

*Balogh, G. 1986. Ecology, Distribution and Control of Purple Loosestrife (*Lythrum salicaria*) in Northwest Ohio. Thesis for Master of Science Degree from Ohio State University. 107 pp.

*Balogh, G. and T. Bookhout. 1989. Purple loosestrife (*Lythrum salicaria)* in Ohio's Lake Erie Marshes. Ohio J. Sci. 89 (3): 62-64, 1989.

*Balogh, G. and T. Bookhout. 1989. Remote Detection and Measurement of Purple Loosestrife Stands. Wildl. Soc. Bull. 17:66-67, 1989.

*Batra, S. and D. Schroeder, P.Boldt and W. Mendl. 1986. Insects Associated with Purple Loosestrife (*Lythrum salicaria*) in Europe. Proc. Entomol. Soc. Wash. Vol. 88(4): 748-759.

*Bender, J., (updated J. Rendall). 1987. Element Stewardship Abstract for *Lythrum salicaria* - Purple loosestrife. The Nature Conservancy. Midwest Regional Office, Minneapolis, MN. 9 pp.

*Blossey, B. 1993. Herbivory below ground and biological weed control: life history of a root-boring weevil on purple loosestrife. Oecologia (1993) 94: 380-387.

*Blossey, B. and R. Malecki. 1995. Instructions for Field Release or Propogation of *Hylobius transversovittatus* for the Biological Control of Purple Loosestrife *(Lythrum salicaria* L.). New York Cooperative Fish and Wildlife Research Unit. Ithaca, NY. 7pp.

*Blossey, B. and R. Malecki. 1995. Instructions for the Propagation of *Galerucella calmarienses* and *G. pusilla* for the Biological Control of Purple Loosestrife (L.). New York Cooperative Fish and Wildlife Research Unit. Ithaca, NY. 5 pp.

*Blossey, B. and D. Schroeder. 1995. Host Specificity of Three Potential Biological Weed Control Agents Attacking Flowers and Seeds of *Lythrum salicaria* (Purple Loosestrife). Biological Control **5,** 47-53 (1995).

*Blossey, B. and D. Schroeder. 1992. Final Report. Biocontrol of Lythrum salicaria in the United States. Sponsored by subagreement No. 20057-57083 with the Cornell University under cooperative agreement No. 14-16-0009-1553 from the US Dept. of the Interior, Fish and Wildlife Service, the Washington State Dept. of Agriculture and the Washington State Dept. of Wildlife.

*Blossey, B. and D. Schroeder, S. Hight and R. Malecki. 1994. Host Specificity and Environmental Impact of Two Leaf Beetles (*Galerucella calmariensis* and *G. pusilla*) for Biological Control of Purple Loosestrife (*Lythrum salicaria*). Weed Science, 1994. Vol. 42:134-140.

*Brookreson, B. 1991. Purple Loosestrife Control Efforts: A Ten Year Perspective. Washington State Department of Agriculture and Washington State Department of Wildlife. 19pp

*Bush, B. and L. Shane, L. Wilson, E. Barnard and D. Barnes. 1986. Uptake of Polychlorobiphenyl Congeners by Purple Loosestrife on the Banks of the Hudson River. Archives of Environmental Contamination and Toxicology. 15, 285-290.

*Clare, W. 1991. Winchester Slough - Paddling Through a Changing World. Signpost. April 1991. Pp 34-37.

*Darwin, C. 1896. The Life and Letters of Charles Darwin. D. Appleton and Co., NY. Vol. II, pp. 474-477.

*Dobberteen, R. and E. Perry, N. Nickerson. 1989. Clear Plastic Retards purple Loosestrife Growth (Massachusetts). Restoration & Management Notes 7:2. Winter 1989. P 100-101.

*Evans, J. 1982. A Literature Review of Management Practices for Purple Loosestrife. The Nature Conservancy- Midwest Regional Office, Minneapolis, MN. January 1982.

*Genrich, M. and J. Rooney and R. McKenzie. Purple Loosestrife Inventory Data. Washington Department of Fish and Wildlife.

*Henderson, R. 1987. Status and Control of Purple Loosestrife in Wisconsin. Research Management Findings Number 4, July 1987. Wisconsin Department of Natural Resources. 4 pp.

*Hight, S. 1992. Supplemental Information to the Petition (TAG #91-02) Requesting the Field Release in the United States of Three European Insect Species as Biological Control Agents for Purple Loosestrife. United States Department of Agriculture. 13 pp.

*Hitchcock, C. L., A. Cronquist, M. Ownbey and J. W. Thompson. 1969. Vascular Plants of the Pacific Northwest. University of Washington Press. Seattle. pp. 183-184.

*Hutchinson, I. Salinity Tolerance of Plants of Estuarine Wetlands and Associated Uplands. Washington State Shorelands and Coastal Zone Management Program: Wetlands Section. Simon Fraser University, B.C. Canada. P 31.

*Lau, K and E. Leopold. 1991. Purple Loosestrife Threatens Washington Wetlands. Washington Park Arboretum Bulletin. Vol. 54:1/Spring 1991. Pp 9 - 11.

*Lindgren, C.J., and R.T. Clay. 1993. Fertililty of 'Morden Pink' *Lythrum virgatum* L. Transplanted into Wild Stands of *L. salicaria* L. in Manitoba. HortScience, Vol. 28(9). p 954.
*Mal, T.K., J. Lovett-Doust and L. Lovett-Doust. 1992. The biology of Canadian weeds. 100. *Lythrum salicaria*. Canadian Journal of Plant Science. Pp 1305 - 1331.

*Malecki, R. 1992. Memorandum to Purple Loosestrife Working Group. Biological Control of Purple Loosestrife. New York Cooperative Fish and Wildlife Research Unit. Department of Natural Resources. Cornell University, Ithaca, NY.

*Malecki, R. A., B. Blossey, S. D. Hight, D. Schroeder, L.T. Kok and J. R. Coulson. 1993. Biological Control of Purple Loosestrife. BioScience Vol. 43, No. 10. Pp. 680-686.

*Malecki, R. A., S. Hight, L. Kok, D. Schroeder, and J. Coulson. 1991. Information for the Preparation of an Environmental Assessment. Host plant specificity testing of *Hylobius transversovittatus, Galerucella calmarienses* and *G. pusilla* for use in the biological control of *Lythrum salicaria* L. in North America. New York Cooperative Fish and Wildlife Research Unit, Department of Natural Resources, Fernow Hall, Cornell University, Ithaca, NY. 79 pp.

*Malecki, R.A. and Rawinski, T.J. 1985. New Methods for Controlling Purple Loosestrife. New York Fish and Game Journal, Vol. 32, No. 1, January 1985. Pp 9-19.

*Ottenbreit, K. and R. Staniforth. 1994. Crossability of naturalized and cultivated *Lythrum* taxa. Canadian Journal of Botany, Vol. 72: 337-341, 1994.

*Piper, G.L. 1997. Purple Loosestrife Biological Control Agent Propagation and Release in Washington. Final Report WSDA Contract # 1A97-7-5 WSU Contract # 60631, October 21, 1997. 9 pp.

*Puget Sounders for the Washington Department of Wildlife Purple Loosestrife Oversight Committee. 1991. Organizing Volunteers to Control Purple Loosestrife. Washington Department of Wildlife.

*Purple Loosestrife Meeting Presentation Summaries. March 29, 1990. Minnesota Department of Natural Resources Building.

*Rawinski, T. and R. Malecki. Ecological Relationships Among Purple Loosestrife, Cattail and Wildlife at the Montezume National Wildlife Refuge. New York Fish and Game Journal, Vol. 31, No. 1, January 1984.

*Shamsi, S. and F. Whitehead. 1973. Journal of Ecology. Pp 631-645.

*Sorby, Sharon. 1991. The Purple Plague. Aquatic Plant News. No. 36, February 1991.

*Stuckey, R. 1980. Distributional History of *Lythrum salicaria* (Purple Loosestrife) in North America. Bartonia Journal of the Philadelphia Botanical Club. No. 47, December 1980. 20 pp.

*Thompson, D. 1989. Control of Purple Loosestrife. Fish and Wildlife Leaflet 13.4.11.
*Thompson, D.Q., R.L. Stuckey and E.B. Thompson. 1987. Spread, Impact and Control of Purple Loosestrife (*Lythrum salicaria*) in North American wetlands. United States Fish and Wildlife Service, Fish and Wildlife Research No. 2. United States Department of Interior, Washington, D.C. 55pp.

*Timmerman, K. 1992. Purple Loosestrife: Noxious Knockout. Idaho wildlife: Vol. 12, no. 2. (spring 1992) pp 26-27.

*Washington Department of Wildlife. 1992. Purple loosestrife (PLS)1992 Activity Report. 20 pp.

*Washington Department of Fish and Wildlife. Purple Loosestrife 1992 Activity Report. 23 pp.

*Washington Department of Fish and Wildlife. Purple Loosestrife 1993 Activity Report. 23 pp.

*Welling, C. and R. Becker. 1993. Reduction of Purple Loosestrife Establishment in Minnesota Wetlands. Wildl. Soc. Bull. 21(1): 56-64. 1993.

*Wilcox, D.A. Migration and Control of Purple Loosestrife (*Lythrum salicaria L.*) along Highway Corridors. Environmental Management Vol. 13. No. 3, pp 365 - 370.

*Windmiller, B and R. Dobberteen. 1989. Control of Purple Loosestrife Through Competetive Planting (Massachusetts). Restoration & Management Notes 7:2, p 101.
***References available** *from the Washington State Noxious Weed Control Board Office in Kent.*

Rationale for Listing:
Purple loosestrife disrupts wetland ecosystems by displacing native plants and animals. Waterfowl, fur-bearing animals and birds vacate wetland habitat when they lose their food source, nesting material and ground cover due to native vegetation loss and replacement. Economic impacts are high in agricultural communities when irrigation systems are clogged or when wetland pastures are lost to grazing.

Purple loosestrife is a prolific seed producer. Seed banks build for years, unnoticed until the right conditions of disturbance appear, resulting in a population explosion. It also has the ability to spread vegetatively when a single node containing adventitious buds along submerged stems is broken, producing new roots or shoots. Seed dispersal by waterfowl, riparian pathways and human disturbance contribute to the spread and dominance of purple loosestrife in wetland areas. The pervasiveness of this species is amplified by the fact that monospecific stands are long-lived in North America, as compared to European infestations.
Prevention must be a major consideration for eliminating purple loosestrife infestations. Purple loosestrife is aggressive and competitive and it takes full advantage of the disturbance to natural wetland vegetation.