

**SAN JUAN COUNTY
NOXIOUS WEED CONTROL BOARD
2012 Program Status Report**

February 1, 2013



**Hoary Cress (*Cardaria draba*)
Class C Noxious Weed**

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San Juan County Noxious Weed Control Board Members:

William Agosta , Chair, 2011, South San Juan P.O Box 1547 Friday Harbor, WA 98250	Bruce Gregory , Chair, 2012, North San Juan 1071 Mitchell Bay Road Friday Harbor, WA 98250
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Joyce Nigretto , West Orcas Island 2366 Orcas Rd Eastsound, WA 98245	William Rupp , East Orcas 122 Peapod Lane Olga, WA 98279
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Open, Lopez, Shaw Islands

Tom Schultz, Director, WSU Extension, Ex-Officio
221 Weber Way, LL
Friday Harbor, WA 98250

Program Staff:

Richard S. Lee, Coordinator (Through December 20, 2012)
Judy L. Jackson, Assistant Coordinator (Acting Coordinator after December 21, 2012)
P.O. Box 1634
62 Henry Road/ #26
Eastsound, WA 98245
(360) 376-3499
judy@sanjuanweeds.org

Summary:

The San Juan County Noxious Weed Control Board added no new species to the county weed list in 2012. As in past years, monitoring and the eradication of Class A weeds, as required by state law, has been a high priority. Of the Class A weeds historically known to exist in San Juan County, buffalobur, bighead knapweed, Clary sage, Spanish broom, milk thistle and velvetleaf were not reported in the county during the past year. Giant hogweed was limited to one known seedling from a previous infestation. Shiny geranium is known from two county locations and is undergoing active eradication efforts. Eggleaf spurge and slenderflower thistle are each known from single locations on County Land Bank land and are being monitored and controlled by Land Bank personnel. They have also been found on a single site each on private property and are controlled by the land owners.

Of the selected Class B and C weeds known to occur in San Juan County, four species are considered eradicated; one species has an extremely limited distribution on three outer islands only; seven species are limited to private gardens and thought to be contained and fourteen species are undergoing concerted control efforts. A total of 30 species are listed for required control and an additional 41 for voluntary control or containment. Twelve species are listed as unregulated by the state, but are considered to be of concern to the county. The horticultural use of these twelve species is discouraged.

San Juan County employs weed control techniques that include an integrated mix of mechanical, cultural, biological and chemical approaches, with the chemical methods seldom used and only when no other approach appears to be feasible. Biological control organisms are used with the guidance of the Washington State University Extension Integrated Weed Project entomologist.

Cooperative efforts with other county, state and federal agencies have assisted the program in decreasing the spread of noxious weeds from public lands and rights-of-way on to private lands.

An increase in educational efforts, including informational letters and letters of notification of weed problems, as well as the 2012 tax insert on spurge laurel, has resulted in heightened property owner awareness of the need to control the proliferation of noxious weed species.

Introduction:

2012 was the San Juan County Noxious Weed Control Program's ninth year of funding as a taxing district and its fifteenth year of operation. The Board annually adopts the county noxious weed list, administers the Noxious Weed Control Program according to the requirements of RCW 17.10 and WAC 16-750, and prioritizes weed control activities. The Board consists of five voting volunteer members and the Director of the San Juan County Extension acting ex-officio. Board members represent each of the five county noxious weed districts and are appointed by the County Council. The Lopez/Shaw Islands seat was vacant during 2012.

The Noxious Weed Control Board staff, under the direction of the San Juan County Noxious Weed Control Board, identifies the scope of noxious weed problems and

carries out the mandates of the state noxious weed control law by focusing on prevention, education and technical assistance in controlling or eradicating noxious weeds. The program currently relies on voluntary compliance, with provisions for enforcement, if it should become necessary.

Duties of the Noxious Weed Control Program also include detecting and rapidly controlling new outbreaks of noxious weeds, surveying weed infestations throughout the county, conducting research on the best methods of weed control or eradication and making that information available to the public and other county agencies, as well as providing assistance in weed control to all members of the county community.

The economic costs of noxious weeds are enormous. Weed control on State Department of Fish and Wildlife lands alone was budgeted at \$2,418,631 in 2007. The State Department of Transportation's budget for noxious weed control in FY 11 exceeded \$4.5 million. The combined cost to the State's General Fund for the State Weed Board and the Washington State Department of Agriculture's Spartina, loosestrife and knotweed control programs is \$3,855,794, for the biennium ending in 2011. Non-native invasive weeds throughout the United States cost an estimated \$26.4 billion per year in agricultural losses. Approximately 420,000 acres of national forests and grasslands are reported to have been degraded or destroyed by invasive plants.

For 2012, in response to the deleterious impacts of noxious weeds, the State of Washington adopted a list of 144 species (Classes A, B, and C) of legally mandated noxious weed taxa, 72 of which have been found in San Juan County. All Class A noxious weeds (40 species statewide) must be eradicated throughout the state. Control of many listed Class B species and all Class C weeds is county optional. The San Juan County Noxious Weed Control Board selected 30 of these Class B and C weeds recorded in San Juan County for control. An additional 43 species known to occur in the County are recommended for voluntary control.

Status of Selected Noxious Weeds (for a summary, see attachments: Table 1):

Class A Weeds:

Of the 39 Class A noxious weeds listed for the State of Washington, eleven have been documented within San Juan County, including two species (shiny geranium and slender flower thistle) that were found for the first time in 2010. All Class A weeds occurring in San Juan County are covered under the state's plant quarantine laws (WAC 16-752-400 through 420, 16-752-500 through 525 and 16-752-600 through 660).

1. **Bighead knapweed** [*Centaurea macrocephala*] - No new plants were reported in 2012. This species may still be cultivated in a few private gardens.
2. **Buffalobur** [*Solanum rostratum*] - No new plants were reported in 2012. This species is occasionally introduced as a contaminant of bird seed. Continued monitoring will be needed, especially in locations near bird feeders.
3. **Clary sage** [*Salvia sclarea*] - No new plants have been reported since one seedling was reported in 2011 growing in a nursery pot that had been filled with soil taken from the original population.
4. **Common cordgrass** [*Spartina anglica*] - The Noxious Weed Control Program staff and personnel from Washington State Department of

Agriculture (WSDA) conducted a *Spartina* survey for the sixth consecutive year. In 2012, WSDA's *Spartina* Coordinator, Nels Mikkelsen, and his team dug out a total of 24 square feet of common cordgrass from the San Juan County intertidal zone, removed eight square feet from the intertidal zone below the San Juan Island Sculpture Park, two square feet from White Point (San Juan Island), eight square feet from the lagoon at Spencer Spit State Park on Lopez Island and six square feet from Fisherman Bay. WSDA staff treated 94 square feet by applying 30 oz. of herbicide to the diffuse infestation in the salt meadow at Low Point (San Juan Island) and nearly one gallon to a newly found 60 square foot clone north of Spencer's Spit. No plants were found at Buck Bay, Mud Bay or Swift Bay.

WSDA plans to conduct a survey in 2013 and has warned that, although neither saltmeadow cordgrass (*S. patens*) or dense flower cordgrass (*S. densiflora*) have been noted in San Juan County to date, continued monitoring for these species, as well as for common cordgrass, will continue to be necessary.

5. **Eggleaf spurge** [*Euphorbia oblongata*] - Of the two known infestations on San Juan Island, the first, on private property, was eradicated by the land owner. The second, on the San Juan County Land Bank's West Side Preserve, has been reduced from several hundred mature plants removed in 1999 to approximately 70 seedlings found in 2012. This site is being regularly monitored and seedlings removed by staff from the San Juan County Land Bank.
6. **Giant hogweed** [*Heracleum mantegazzianum*] - Only one seedling was found on Raven Ridge at the site of a previous heavy infestation. Once widely scattered throughout San Juan and Orcas Islands, all known plants have been destroyed, although seedlings may still be expected. Monitoring of all sites where hogweed has historically been present is essential for the next several years. Monitoring on two sites on private properties is being done by the property owners.
7. **Milk thistle** [*Silybium marianum*] - No new plants were reported in 2012.
8. **Shiny geranium** [*Geranium lucidum*] - Program staff eradicated all seedlings located in Moran State Park for the second consecutive year. Unfortunately, three new seedlings were discovered approximately nine feet outside the perimeter of the original infestation.

The only other known infestation within San Juan County is found on Posey Island, which is managed jointly by the Bureau of Land Management and Washington State Parks. For the second year, BLM's Nick Teague conducted a volunteer effort to remove shiny geranium seedlings from the island in late May.



BLM's shiny geranium control crew

9. **Slenderflower thistle** [*Carduus tenuiflorus*]- Two stands were discovered growing in the county in 2010. A dense stand was located in May, 2010, on San Juan Island and dug out by San Juan County Land Bank staff. Another stand was found in a corral on San Juan Island. The property owner was requested to remove it promptly. Slender flower thistle is an annual, and no seedlings were found by weed program staff in late summer of 2012 on the Land Bank site.
10. **Spanish broom** [*Spartium junceum*] - No new plants were reported from San Juan County in 2012.
11. **Velvetleaf** [*Abutilon theophrasti*] - No new plants were reported in 2012.

Class B and C Selected Weeds: Many of the county's Class B weeds are covered under the State plant quarantine laws, including the following: gorse; Scotch broom; meadow, diffuse and spotted knapweeds; Japanese, giant, and Bohemian knotweeds; purple, wand and garden loosestrife; lawnweed; ox-eye daisy; policeman's helmet; Scotch broom; Queen Anne's lace; tansy ragwort; Scotch thistle and water primrose.

1. **Blueweed** [*Echium vulgare*] - No new plants have been found in 2012.
2. **Common fennel** [*Foeniculum vulgare*] - Herbicide treatment in previous years has substantially reduced the Jackson's Beach gravel pit fennel stand to the point at which mechanical control has become feasible. Weed Program personnel dug out all seedlings found on the roadside, as well as on the gravel slope, in 2012. Further monitoring for new plants will be required for several years. However, a few mature plants were spotted growing in the broom patch located in the gravel pit, south of the right-of-way. Additionally, fennel is spreading from the San Juan Recreation property on the north side of the road to the rights of way and to adjoining properties. All other fennel found along the county rights of way has been removed by Program staff.
3. **Common tansy** [*Tanacetum vulgare*] - Common tansy exists in isolated patches on the main islands along the roadsides, where we are digging it out or removing flowers and seed heads as they are located, and in pastures and ornamental plantings or on roadsides. This species has not been noted on the two previously known sites on Orcas Island for the last two seasons. Toxic (potentially a cause of convulsions and abortions in livestock), common tansy has the ability to spread rapidly in open grasslands, degrading forage. If left unchecked, it may eventually become more invasive in this county than tansy ragwort. It has become a prevalent weed throughout several adjacent counties.
4. **English and Irish (Atlantic) ivy** [*Hedera helix* vars. *Baltica*, *Pittsburgh*, and *Star* and *H. hibernica*] - Program staff continues to remove ivy along the roads as time permits. This will remain an ongoing project since ivy re-grows from cut stumps and chemical application on public rights-of-way is prohibited by county regulation (SCC 18.50, 18.60).

5. **Eurasian watermilfoil** [*Myriophyllum spicatum*] - Eurasian watermilfoil was noted as present in the county by Don Knoke (2004, Vascular Plant List, San Juan County). Because it is difficult to distinguish Eurasian milfoil from its native congener, the program routinely sends milfoil samples to WSDOE for verification. All milfoil populations that we have sampled have proved to be the native species (*M. sibiricum*). Research from WSDA, however, has indicated that *M. sibiricum* may hybridize with *M. spicatum* or other members of that genus, so the milfoil populations in San Juan County should be regularly monitored.
6. **Gorse** [*Ulex europaeus*] - The major Olga Road gorse patch above the limits of the right-of-way and within the right-of-way appears to be spreading, with the three isolated patches coalescing. Several extensive and dense stands of gorse on private property in the Doe Bay area present a fire hazard, particularly as we are facing potentially warmer and drier summers. Gorse on two private properties near Doe Bay has been carefully sprayed in past years by a commercial operator or by the individual land owners, but the weed has filled in again. That commercial operator is no longer available for work in the county. However, in 2012, San Juan Pest Control Services has done herbicide application on broom last year and may be available to work on gorse where permitted by county ordinances.

San Juan County, in cooperation with the BLM, contracted Northwest Management, Inc. to produce a wildfire preparedness and management plan which included sections on the fire hazards presented by gorse infestations. This plan will provide the background on which to write grant proposals in search of funding for gorse control.

7. **Hairy willowherb** [*Epilobium hirsutum*] - We removed several plants that were growing in a dense blackberry tangle in Friday Harbor for the third consecutive year. Since this stand is several years old, monitoring for, and removal of, new plants will be necessary for several years. Four new plants were found and removed from the newly constructed Eastsound storm water project in late summer of 2012.
8. **Hawkweed, orange** [*Heiracium aurantiacum*] - We dug out several plants from the edges of a parking lot in Eastsound for the third season. Thus far, this highly invasive species has not been located in any other areas of the county.
9. **Knapweed, diffuse** [*Centaurea diffusa*] - No new plants were found in 2012. The Burke Herbarium data shows that this species was collected along Rosler Road (San Juan Island) in 2007, but we have been unable to find the species during our monitoring of that site. Data from the Burke also notes that a hybrid of diffuse and spotted knapweeds (*Centaurea x psammogena*) was also found at the same site in 2007. We have been unable to locate any specimens.
10. **Knapweed, meadow** [*Centaurea jacea x nigra*] - Surveys on San Juan Island and Orcas Island continue to show a reduction in the number of roadside infestations. On San Juan Island, we found a several scattered seedlings and a few mature plants growing outside the areas previously

mulched by Public Works and located on the east side of West Valley Road, just north of the junction of Mitchel Bay and West Valley Roads. We also found new plants growing on the east side of the road, south of the Mitchell Bay Road junction.

On Orcas, we continue to work with a landowner who is slowly covering his infested field with back plastic, one area at a time, and for one growing season only. Although this project appears to be succeeding in killing the knapweed over a short interval and without the use of herbicides, due to the cost of procuring materials and disposing of the degraded plastic, this may not be the best control option.

After having sprayed a small patch of knapweed in 2011 for the Port of Orcas, we found only three small plants during this past season.

11. **Knapweed, spotted** [*Centaurea stoebe*] - Program staff continued their long-term hand removal project in Friday Harbor at the County Courthouse and near the ferry landing. These populations have been reduced by more than 90% over the last several years. Control of residual seedlings remains a priority. No seed has been produced in the Courthouse patch for the past nine years. Spotted knapweed is primarily distributed within the limits of the Town of Friday Harbor, centered around the Courthouse, Blair Street, the San Juan Island Transfer Station and near the Ferry Terminal.
12. **Lawnweed** [*Soliva sessilis*] - Known populations are limited to campsites on Turn, Posey and Matia Islands. We have had no reports of this species in 2012.
13. **Parrotfeather** [*Myriophyllum aquaticum*] - The only known population of this aquatic weed in the county is isolated in a hobby water garden on Orcas Island and is not likely to spread as parrotfeather in North America is not known to produce seed and this water garden is not confluent with any waterway.
14. **Perennial sowthistle** [*Sonchus arvensis arvensis*] - Known perennial sowthistle sites remain limited to small areas on San Juan Island (Bailer Hill Road, Eagle Cove) and Orcas (Dolphin Bay Road). Perennial sowthistle is removed when found.
15. **Poison hemlock** [*Conium maculatum*] – Staff dug out small stands of poison hemlock along roads and on private land on Orcas, San Juan and Lopez Islands in 2012. Several dense infestations were reported on San Juan, including one on Port of Friday Harbor property which was mowed and treated with herbicide late in the season in 2012 and at the south end of Lopez Island.

Since livestock poisonings from Thurston County were reported in 2010, and a human fatality and human poisonings have been anecdotally reported from Pierce and Whatcom Counties, respectively, increased emphasis has been placed on poison hemlock control.

16. **Policeman's helmet** [*Impatiens glandulifera*] - Primarily a threat to wetlands, isolated patches of policeman's helmet have been historically noted in a few private gardens in Friday Harbor, Lopez Village and near Olga. This species is being monitored and has, so far, not shown signs of spreading.

17. **Purple loosestrife** [*Lythrum salicaria*] - We treated the two largest known patches of loosestrife in the county, located in Richardson's Marsh and in the ponds at the head of West Sound Creek (both on Orcas), for the eighth consecutive year with beetles (*Galerucella* spp.) supplied by Jennifer Andreas (WSU). (see "Biological Control Efforts" below).

No plants were reported growing from previously known stands in Moran State Park, the swale at Island Market, nor Massacre Bay. The only known population on Lopez is being controlled biologically with insects supplied by the land owner. A stand of loosestrife at Mom's Marsh on Shaw Island is being controlled with beetles provided by WSU.

18. **Rush skeletonweed** [*Chondrilla juncea*] - No new plants have been reported in 2012.

19. **Scotch broom** [*Cytisus scoparius*] - Several large properties on Orcas were cleared of broom during 2012 and the land owners have committed to monitoring and removal of re-growth. Several small stands of broom were removed from roadsides on Shaw Island by program staff in early summer.

San Juan Pest Control personnel treated at least one large broom infested property with herbicide during the summer of 2012. The property owners were well satisfied with the work and the cost.

The Noxious Weed Control Program office maintains a small stock of weed wrenches for loan to land owners to help control broom infestations on private property. The program loaned these tools out 45 times during 2012 for use on Orcas and San Juan Islands. The Land Bank keeps several weed wrenches available to the public on San Juan and Lopez Islands, and the Lopez Public Works Office also maintains two wrenches for use on that island. Scotch broom remains one of the most difficult weeds in the county to control. It is so prevalent throughout the state that many western Washington counties only select it for control in designated areas where the broom populations are small or already substantially reduced.

20. **Scotch thistle** [*Onopordum acanthium*] - No new plants were reported in 2012.

21. **Spurge laurel** [*Daphne laureola*] - A student at an Orcas Island preschool consumed a very small portion of a single spurge laurel leaf and was immediately sickened and rushed the local clinic. Fortunately, the child vomited immediately and there were no lasting ill effects.

Because of this plant's toxicity and threat to forest floor diversity, this species remains a major priority for the county weed control efforts on public and private property and was the topic of the Noxious Weed Control Program's 2012 tax enclosure that was distributed to all county property owners in the annual tax bills.

Weed Control Program staff and a volunteer on San Juan Island continue to remove spurge laurel along the county roadsides. A cadre of volunteers paddled kayaks to Victim Island to help cut spurge laurel.

A large but diffuse infestation of spurge laurel on property owned by the Port of Friday Harbor was removed during the past season. Yearly control efforts will be needed on this property for next several seasons.

22. **Sulfur cinquefoil** [*Potentilla recta*] - Program staff has been able to dig out small infestations along rights-of-way and on Port of Friday Harbor property, but the actual extent of this weed on the public rights-of-way and private lands is not fully known.
23. **Tansy ragwort** [*Senecio jacobaea*] - The over-all known population of tansy ragwort in the county is slowly being reduced as public awareness grows and more landowners are taking steps to clear their property of this species. Residents of many areas of the county continued to make special efforts to control tansy ragwort in 2012. In the last several years, Public Works road crews have devoted more effort to roadside tansy control than in past seasons. Tansy ragwort is the target of several biological control efforts (see “Biological Control Efforts” below), although adverse weather conditions have reduced the effectiveness of those efforts on this species for the past three years. This species will be the subject of 2013 tax mailing insert.
24. **Water primrose** [*Ludwigia hexapetala*] - The single infestation of this aquatic species is located at the head of West Sound Creek on Orcas and has been strongly reduced by the property owners and is being monitored by program staff and the landowner.



Water primrose, West Sound Creek

25. **Yellow archangel** [*Lamium galeobdolon*] - This species is an aggressive invader of woodlands, capable of choking out almost all other vegetation. A small infestation located on the lower Turtleback Trail is being contained by program staff. Other infestations have been noted encroaching on wetlands and woodlands. Large outbreaks on Miller Road and at Eagle Cove remain uncontrolled and threaten the surrounding woodlands.

Important Non-Selected Class B and C Weeds:

These weeds are mandated for voluntary control in San Juan County, and warrant special notice.

1. **Blackberry** [*Rubus armeniacus* and *R. laciniatus*] - Both of these blackberries were added to the State C list in 2009. The two species are aggressive invaders of meadows, open woodlands and hedgerows. The berries are sought after by humans and birds, the latter widely disseminating the seeds.
2. **Brazilian elodea** [*Egeria densa*] - We have found a historical record of this aquatic weed from a pond on private property on San Juan Island, but have not located any specimens.

3. **Butterfly bush** [*Buddleja davidii*] - This popular but highly prolific and aggressive ornamental is capable of spreading rapidly beyond the confines of gardens. There are only a few known uncultivated populations of butterfly bush in the county, but judging on the experience of neighboring counties, it is important to monitor this species carefully. We recommend that gardeners dead head existing plants to prevent seeding and to plant only non-invasive (but of equal or greater horticultural interest) members of same genus, such as *B. globosa*, *B. fallowiana* or *B. x weyeriana*. For gardeners devoted solely to this species, a sterile male cultivar of *B. davidii* is available from selected nurseries.
4. **Dodder** [*Cuscuta* sp (cf *approximata*?)] - This is potentially an important and destructive agricultural parasite. Any reports of new findings should be followed up. Only two populations have been noted in the county: one (since extirpated by the property owner) on Orcas near the ferry landing and one near False Bay on San Juan Island.
5. **Hairy whitetop** [*Cardaria chalapensis*] - Records from the Burke Herbarium show that this species was collected from the shoreline near the south end of Lopez Island. We were unable to locate any plants during an inspection of the site during the past summer.
6. **Non-native hybrid hawkweed** [*Heiracium x flagellare*] - This hawkweed was found in 2012 along Mt. Baker Road near the south end of the Eastsound Airport runway and along the road near the Eastsound Fire Station. References to this plant were noted also from the same area in the records of the Burke Herbarium.
7. **Herb Robert** [*Geranium robertianum*] - Ubiquitous and not selected for control in San Juan County, herb Robert is one of the fastest spreading weeds in the islands and throughout the Pacific Northwest, invading shaded woodlands from the roadsides. Control efforts are directed towards keeping it from spreading further from campgrounds into relatively pristine areas of Moran State Park. The large scale removal of diseased trees in the Park, however, may facilitate the spread of herb Robert into new areas of the Park's campgrounds.
8. **Hoary cress** [*Cardaria draba*] - Hoary cress is abundant on the County Fairground near the pig barn and scattered thinly over the rest of the property. The densest concentration is located in the manure pile at the southwest corner of the grounds. It is likely that manure taken for compost may have spread this species to other farms and gardens. It is also located in the gardens on private property adjacent to the fair ground. The program produced a poster on this species for distribution to the county fair personnel and local farmers.
9. **"Giant" knotweeds** [*Polygonum sachalinensis*, *P. cuspidata*, and *P. x bohemicum*] - Late in the summer Of 2011 a former Weed Board member noted that the Bohemian knotweed stand on Mt. Baker Road (Orcas) was severely diminished by an unknown cause. At that time, we found no obvious organism that might be responsible for this damage. During the

2012 season this stand was again severely depleted, although relatively healthy plants were found around the perimeter of the stand. Herbicide damage now seems to be the most likely cause of the noted die back. Other giant knotweeds may be found in isolated stands on the larger islands. A small stand of Japanese knotweed (*P. cuspidata*) occurs in Moran Park. Giant knotweed (*P. sachalinensis*) has been noted on private land near Richardson's Marsh and in a small stand in Eastsound. It is also found on Decatur Island near Decatur Head Drive. The Eastsound stand has not been found in the last two years. Most populations of knotweed in San Juan County appear to be stable, having been established for long periods without spreading significantly

10. **Myrtle spurge** [*Euphorbia myrsinites*] - Myrtle spurge is a common xeric ornamental that may move out of the confines of gardens into dry open land, but does not yet appear to be aggressively invasive in San Juan County. The sap is a strong dermal irritant, capable of burning or blistering the skin of susceptible persons.
11. **Old man's beard** [*Clematis vitalba*] - Introduced at Roche Harbor in the early 1900's, *Clematis* has spread in isolated areas on San Juan Island and has become a serious pest in woodlands on Orcas, especially in Eastsound and near Moran State Park, where it is found not far from both entrances, and near West Sound. Program staff continues to remove this species from selected areas on Orcas roadsides. It is also present on Land Bank property on Lopez Island. The heavy infestation in the trees in the right-of-way along Lovers Lane (Eastsound) is being controlled by the adjacent property owners.

As with ivy, a wick or cut and daub herbicide treatment in combination with manual removal may be the most efficient and effective means of control, but is not allowed, under county regulation (SCC 18.50, 18.60), on public rights-of-way.

12. **St. John'swort** [*Hypericum perforatum*] - St. John'swort is spreading on Orcas Island from loci on Mt. Woolard and Turtleback, and along the roadsides on San Juan Island. It is also found in isolated stands on Lopez. This plant is toxic to light skinned livestock but is valued by some local herbalists for its medicinal properties. Our current St. John's-wort control efforts have been primarily biological (see "Biological Control Efforts" below) and have been discontinued.
13. **Thistle, Canada and bull** [*Cirsium arvense* and *C. vulgare*] - Experimental herbicide applications have been applied on several Canada thistle populations. Initial results appear to be promising with strong thistle mortality. Although thistle is considered too widespread for effective control county-wide, the program gets a large number of requests for information on these two species. Informational brochures based conditions in San Juan County are available to advise landowners on thistle control. The gall fly, *Urophora cardui*, has been introduced in several areas on Orcas (most recently in 2010) and on Lopez, but has not prospered and its use was discontinued in 2011.

14. **Yellow flag iris** [*Iris pseudacorus*]- This ubiquitous wetland ornamental is invasive in roadside ditches and in ponds such as Richardson's Marsh and Fowler's Pond on Orcas, Lawson's Pond on San Juan Island, and other small ponds and wetlands throughout the county. It is also spreading in the roadside ditch on Flaherty's Hill (Orcas Island) and on San Juan Drive (San Juan Island). The OPAL community of Bonnie Brae on Orcas Island is making efforts to reclaim a shallow retention pond from a yellow iris infestation. Yellow iris crowds out other wetland species and significantly alters wetland ecology, and is a potential cause of gastroenteritis in livestock and capable of causing dermatitis in humans.

Populations of the following listed weed species were also noted but did not receive action during 2012: common catsear (*Hypochaeris radicata*), field bindweed (*Convolvulus arvensis*), reed canary grass (*Phalaris arundinacea*), yellow toadflax (*Linaria vulgaris*), common groundsel (*Senecio vulgaris*), fragrant water lily (*Nymphaea odorata*), oxeye daisy (*Leucanthemum vulgare*), wand loosestrife (*Lythrum virgatum*), and wild carrot (*Daucus carota*).

The following non-selected species have been noted in San Juan County (P. Zika, 2005, A Report to the Washington Native Plant Society) but have not been located out of cultivation by the Noxious Weed Control Program staff: Black henbane (*Hyosyamus niger*), puncturevine (*Tribulus terrestris*), camelthorn (*Alhagi maurorum*) and garden loosestrife (*Lysimachia vulgaris*).

Selected Non-listed Weeds of Special Concern:

1. **Bur chervil** [*Anthriscus caucalis*] - Bur chervil has become a prevalent and vigorous weed on at least two farms on San Juan Island. Both cases required chemical treatment by the property owners to control the spread. In early summer of 2012, this species was noted on the county fairgrounds, concentrated near the pig barn and scattered sparsely along the east property fence. Bur chervil closely resembles its listed congener, wild chervil (*A. sylvestris*), but may be distinguished by the hooked hairs on the fruits. To date, we have not noted wild chervil in San Juan County, but suspect that it is likely present.

2. **English (one-seeded) hawthorn** [*Crataegus monogyna*] - Public Works removed a large number of mature English hawthorns during the construction of the new storm water facility in Eastsound. Branches, however, were left on the ground and had started to sprout when the program staff inspected the site several months later.

Despite not being on the official noxious weed list for the state or county, concern about this non-native hawthorn accounts for a large number of complaints and site visits. The National Park, the Port of Friday Harbor and property owners in the Douglas Road/Bailer Hill section of San Juan Island have been particularly impacted by this species. The U. S. Fish and Wildlife Service rates English hawthorn as a high priority weed and has devoted considerable effort to removing it from some of the outer islands. Since the seed is widely disseminated by birds, hawthorn is especially

abundant in pastures and hay meadows, spreading out from hedgerows and fence lines, becoming a serious agricultural problem. The tendency of this species to hybridize with other *Crataegus* species, including the native black hawthorn (*C. douglasii*), can make identification difficult.

3. **English holly** [*Ilex aquifolium*] - An effort to add English holly to the State Noxious Weed List in 2010 was vigorously opposed by the holly farming industry and ultimately turned down by the State Noxious Weed Control Board after a public hearing in November, 2010. In the San Juan Islands, holly is a common shrubby understory tree in forests, encroaching into meadow edges. Holly, like hawthorn, is difficult to control due to seed dissemination by birds, and because stems vigorously stump sprout, forming multiple suckers. Holly control efforts have been undertaken by the Land Bank, Public Works in the Eastsound Storm Water Reclamation Project, OPAL and on private land on Stuart Island. It is also a priority weed on the San Juan Preservation Trust's Vendovi Island. The U. S. Fish and Wildlife Service also considers holly to be a high priority weed for the outer islands.
4. **English (cherry) and Portugal laurel** [*Prunus laurocerasus* and *P. lusitanica*] - These two species have become invasive in the urban parks of Seattle and Portland. In at least one area, near the south end of Lopez Island, English laurel has spread from an extensive hedge throughout a neighboring property.
5. **Non-native lupine** [*Lupinus* spp.] - Lupine was once widely used in the county to reseed road cuts and has now spread into pastures and hayfields. As several lupine species may cause birth defects in livestock, its use in mass seedings along roadsides, particularly near farmlands, should be discouraged.
6. **Pampas grass** [*Cortaderia selloana* and *C. jubata*] - These commonly planted ornamental grasses are appearing with ever increasing frequency throughout the county in conjunction with new landscaping. In California, these species have proved to be disastrously intractable and costly to remove and, while they do not yet appear to be aggressively invasive here, with the trend towards warmer and drier summers, the use of this plant as an ornamental should be discouraged.
7. **Caper (mole) spurge** [*Euphorbia lathyris*] - As with other *Euphorbias*, caper spurge sap is a strong dermal irritant and the species is a potentially vigorous invader of dry open meadows, often found with eggleaf spurge (*E. oblongata*, Class A). Caper spurge is a problem on and adjacent to Land Bank property on the west side of San Juan Island and on Mt. Ben. In both areas, the Land Bank has been actively working to control this species.
8. **Periwinkle and dwarf periwinkle** - [*Vinca major* and *V. minor*]- Both species (especially *V. minor*) have become invasive weeds where they have escaped from ornamental gardens and are colonizing roadsides and shorelines and are encroaching into open woodlands.
9. **Teasel** [*Dipsacus fullonum*] - With assistance from volunteers, the teasel outbreaks have been greatly reduced along the roadsides on San Juan and Orcas Islands. Because of these reductions and the relatively short seed life

of this species, we expect to spend fewer hours controlling teasel in coming seasons along the roadsides.

Teasel will be placed on the Washington State Noxious Weed List in the C category in 2013.

Biological Control Projects:

Introduced biological control organisms undergo a rigorous testing period to ascertain that they will only impact the intended host. Biological control organisms are currently being used on eight noxious weed species in San Juan County. Successful noxious weed containment using biological agents usually depends on the long-term successful establishment of more than one species of control organisms on each weed species. The cool wet weather of the past two years has generally not favored the growth of our biological control populations.

1. Tansy ragwort:

- a. Tansy ragwort flea beetle [*Longitarsus jacobaeae*] - Since before 1997, several attempts have been made to establish this beetle at various locations in the county. Self-sustaining populations of this weevil are now found in the False Bay area of San Juan Island, in Moran State Park, in the Eagle Lake area and on Buck Mountain on Orcas Island. As of the end of 2012 the populations of the flea beetle are not sufficient to support collecting and redistributing.
- b. Seed head fly [*Botanophila seneciella*] - A small population of this species was first noted in San Juan County in 1997. In 2005, this population was augmented with a concentrated release of about 500 adult flies in the Eagle Lake area. Adults are now common in many areas and now may be collected and redistributed throughout the county.
- c. Cinnabar moth [*Tyria jacobaeae*] - Long established in San Juan County, cinnabar moth larvae help control tansy ragwort populations by destroying flower heads and defoliating plants. By themselves, they are of limited effectiveness, at least in our climate, as the host plants readily re-sprout from the roots and can re-flower when the larvae have pupated. In synergy with other biological agents such as the tansy ragwort flea beetle, however, they may become quite effective. Since it has been determined that cinnabar moth larvae may potentially damage several other species of *Senecio* and closely related *Packera* species, these insects are no longer being redistributed in the county by Weed Program staff. Since 2010, the cold, wet winter and spring weather has substantially diminished the *Tyria* populations in many areas of the county.

2. Scotch Broom:

- a. Seed weevils [*Exapion fuscirostre*] - Three releases of these beetles were set out on Orcas Island in 1997. In 2007, several recaptures on Orcas indicated that the species is still present, but at extremely low levels. No new *Exapion* releases are anticipated. While these beetles do not harm the plant itself, they feed on maturing seeds.

- b. Broom mites [*Aceria genistae*] - Several populations of this gall producing mite have been noted in various parts of the county. The origin of these mites in the county is unknown. While Jennifer Andreas (WSU) has advised us that it is illegal to redistribute this organism, it appears to weaken the plants where it occurs. Its degree of host specificity is still unknown. In 2012 infected broom plants were found to be more widely distributed on Orcas and San Juan.
 - c. Scotch broom bruchids [*Bruchidius villosus*] - These tiny beetles are widely established on Orcas, Lopez and San Juan Islands, but the populations in 2011 and 2012 were notably lower than in 2009, possibly due to climate factors. Two releases of this bioagent were made on Orcas in 2010. The original source for this species in the county is unknown. Like *Exapion*, bruchid beetles feed on the seeds, and it is hoped that these species may slow the rate of reproduction of broom.
3. Purple Loosestrife:
 In May, 2012, we released approximately 500 loosestrife beetles (*Galerucella californiensis* and *G. pusilla*) at Richardson's Marsh (Orcas) to supplement our prior releases. We decided to bypass releasing beetles at the head of West Sound Creek's loosestrife this year due to the evident insect damage from past years' releases. In 2010, two releases were made on Mom's Marsh on Shaw Island. These insects have also been released on private property off Fisherman Bay Road on Lopez by the landowner, resulting in a significant reduction of the infestation. In other areas of the state, these beetles have proved to be effective in suppressing loosestrife.
4. Knapweeds:
- a. Spotted Knapweed: Of the three biological control species (*Urophora affinis* (Diptera), *Metzneria paucipunctella* (Lepidoptera) and *Larinus obtusus*) (Coleoptera) released in Friday Harbor in 1998 on spotted knapweed, only the fly, *Urophora*, became established, and that only in extremely low numbers at the Presbyterian Church site on Spring Street, but has not been noted in the last four years.
 - b. Meadow Knapweed: On Lopez, two species of the weevil (*Larinus minutus* and *L. obtusus*) have been released on the major infestations on Fisherman Bay Road near (and on) a Lopez farm. These beetles have become established and it is expected that they will help control seed production, although they will not actually reduce the standing crop of knapweed. On Orcas Island, *Larinus obtusus* and a root weevil (*Cyphocleonus achates*) were released on property near Orcas Landing in 2006. The root weevils were released experimentally and it is unknown if they will consume meadow knapweed, or if they will only devour spotted and diffuse knapweeds. As of 2011, its establishment is doubtful. Deer, and possibly mice, appear to be eating knapweed seed heads infected

with biological control larvae, thus reducing the effectiveness of the biocontrol effort. Deer, by themselves, are not effective as biological control agents as they eat only the flower heads and the plants actively spread from the roots.

5. Canada Thistle: Galls containing pupae of the gall fly *Urophora cardui* were released at two sites (Moran Park and near Eagle Lake) on Orcas Island in the summer of 2006. These releases were supplemented in 2007 and it appeared that the populations had become established at least at low levels, but by 2010, there was little evidence that these gall flies were present at either Eagle Lake or Moran State Park. Another release was made in the Park in 2010, but Park personnel subsequently mowed the release site. *U. cardui* galls were also placed at one site on Lopez in 2006, but did not become established. The release of thistle gall flies was discontinued in 2011. The Lopez Island site was spot treated with Milestone™ by program staff in 2009.
6. St. John'swort: *Chrysolina hyperici* and *C. quadrigemina* (Coleoptera) are active flower and foliage consumers and have become established at low levels on Orcas and San Juan Islands. However, it appears that they pupate early and the host plants recover quickly from their depredations. To augment these beetles, releases of *Aplocera plagiata* (Lepidoptera) and *Agrilus hyperici* (Coleoptera) were made in the latter part of the summer of 2006. It is doubtful that either *Agrilus* or *Aplocera* were established by 2011. Low numbers of *Chrysolina* spp. were observed in 2011. The release of *Chrysolina* beetles was discontinued in 2011.
7. Gorse: Gorse mites (*Tetranychus lintearius*) were introduced in 1998 and rapidly became established but then died back to a residual population. Since that time the mite populations have fluctuated with the weather, and have not proved to be an effective control organism for gorse in our climate and their release has been discontinued. During the warm and dry months in late summer and early fall of 2012, the gorse mite population on the original release site boomed, creating substantial, but likely not fatal, damage to the host plants.

All biological control organisms (except the gorse mites) released by the County Noxious Weed Control Program since 2004 were obtained from the King County Washington State University Extension Integrated Weed Project with the assistance of the Director, Jennifer Andreas, at no cost to the county. (See Table 2- Summary of biological control organism releases on San Juan County.)

Personal Contacts Summary:

There were 1125 contacts (averaging 93.75 contacts per month), not including the San Juan County Fair. Included in this figure are about 69 site visits and 27 letters of notification of noxious weed problems that were mailed. Additionally, we sent out copies of the 2012 Weed List with copies of the Washington State weed laws and other pertinent information to 125 county nurseries and landscape businesses.

As in past years, contacts at the 2012 County Fair provided anecdotal evidence of weed distributions that would be otherwise unavailable, as well as many opportunities for

effective one-on-one education. There were approximately 244 contacts at the program's fair booth. As usual, the presence of live plants together with photographs attracted a lot of attention.

Enforcement: A carefully worked out set of procedures for enforcement of the state weed laws has been worked out in cooperation with the County Prosecuting Attorney's Office with the assistance of Deputy Prosecuting Attorney, Amy Vira, and is included in this report as an attachment.

Washington State Law (RCW 17.10.130-230) provides the legal mechanism to enforce state weed law upon both private and public landowners. The process involves notification of the landowner by certified mail, clearly stating the nature of the weed infestation and setting time limits for the commencement of effective control activities. While under this legal framework, the Noxious Weed Control Board staff has the right of entry to property and to impose liens in order to accomplish the needed control actions, the staff takes special care not to enter private property without permission. Built into the process is the ability for the landowner to appeal any decision to the County Noxious Weed Control Board.

Given the desire to work in a more collegial and non-confrontational manner with all county stakeholders, the County Noxious Weed Control Board has not directed staff to undertake any enforcement activities with either private property owners or public agencies to date. Instead, a series of notification letters has been developed to notify residents of observed weed infestations and inform them of their noxious weed removal and control responsibilities. The weeds of highest priority are spurge laurel, poison hemlock, Scotch broom, gorse and tansy ragwort. Typically, citizens are responsive to the first letter informing them of noxious weeds on their property and their legal responsibilities. Cooperation upon the receipt of the first letter, normally, has been satisfactory after follow-up either in person or by telephone. In some cases, a second or third notification has been necessary.

Weed Control on County Rights-of-way:

In 2012, the program staff has devoted increased hours to roadside weed control due to the loss of the Public Works Roadside Technician. Common fennel in the Jackson's Beach gravel pit area was excavated along the right-of-way. Teasel, spurge laurel, tansy ragwort, poison hemlock, non-native hawkweeds, sulfur cinquefoil and spotted and meadow knapweed were removed from roadsides on San Juan and Orcas Islands by program staff. Poison hemlock and meadow knapweed were removed from selected rights-of-way on Lopez Island.

Public Works crews cleared tansy ragwort from roadsides on Orcas, San Juan and Lopez and program staff and volunteers supplemented this effort by removing later blooming tansy when found on Orcas and San Juan Islands.

Herbicide use: WSDA staff used 30 oz. of a mixture of Imazopyr™ and glyphosate to treat common cordgrass (*Spartina anglica*) at Low Point (San Juan Island) and nearly one gallon on a newly located infestation of cordgrass at Spencer Spit (Lopez).

We also occasionally discuss with property owners the limited use of glyphosate, triclopyr and Milestone™ on knapweed and tansy ragwort because of their effectiveness

and low toxicity to terrestrial and aquatic invertebrates, birds and mammals. In discussing the use of Milestone™, we are careful to emphasize the agricultural hazards presented by this herbicide.

The San Juan County Noxious Weed Control Program applies an Integrated Pest Management (IPM) program to fulfill the requirements of the Washington State Noxious Weed Law (RCW 17.10). IPM, as defined by RCW 17.50, is a coordinated decision-making and action process that uses the most appropriate pest control methods and strategy in an environmentally and economically sound manner to meet programmatic weed control objectives. The San Juan County Noxious Weed Control program staff emphasizes that all appropriate mechanical, cultural and biological methods are to be used before advising or resorting to chemical control methods.

Herbicides used by staff, or recommended to landowners who choose to use them, have been approved by the WSDA for specific applications. Under labeled uses, the United States Environmental Protection Agency, and/or other reliable sources or studies have determined these herbicides not to be carcinogenic or mutagenic, or to contain developmental toxins or cause reproductive effects.

Publications:

In addition to the yearly State and San Juan County Noxious Weed List, informational brochures on controlling ten weed species (tansy ragwort, yellow archangel, gorse Scotch broom, bull thistle, Canada thistle, herb Robert, spurge laurel, ivy, and blackberry) are available. A flier on spurge laurel was prepared and inserted in the 2012 county tax statement mailing, and a similar flier was prepared on tansy ragwort for insertion in the 2013 tax documents. The tansy ragwort tax insert is a revision of a similar insert used several years ago for this species, repeated because of this plant's toxicity and threat to county agriculture.

Recent editions of the Washington State Noxious Weed Control Program's *Noxious Weeds that Harm Washington State* (the "Black Book") and *Garden Wise*, listing desirable alternatives to invasive ornamental plants, are available to the public at no cost through the County Noxious Weed Control Program office in Eastsound and from the Master Gardener Program at the WSU Extension Office in Friday Harbor, as well as from several nursery outlets. The State Noxious Weed Control Board also published a series of postcards in 2010, 2011 and 2012, each of which is devoted to a particular species of noxious weeds. These cards are also available through the Noxious Weed Control Program office.

Cooperative Relationships:

We have working relationships with the following agencies and organizations: Washington State University Integrated Weed Control Project, WSU (San Juan County) Extension Service, San Juan County Land Bank, San Juan County Public Works, San Juan Islands Conservation District, San Juan County Permit Center; United States Forest Service, Moran State Park, US Fish and Wildlife Service, US National Park Service, Washington State Department of Agriculture, Washington Department of Fish and Wildlife, US Bureau of Land Management, WSU Master Gardeners, US Department of Natural Resources, People For Puget Sound, Washington State Noxious Weed Control Board, the University of Washington, the San Juan Nature Institute, the San Juan

Preservation Trust, as well as other county noxious weed control programs throughout the state.

Attachments:

- i. Table 1: Summary of weed control projects in San Juan County
- ii. Table 2: Summary of biological control agents released in San Juan County
- iii. Tansy Ragwort Control Brochure
- iv. Washington State and San Juan County 2012 Noxious Weed List
- v. Introduction to Washington State Weed Law
- vi. San Juan County Weed Law Enforcement Guidelines and Procedures
- vii. June, 2011 Washington State Plant Quarantine List

Table 1- Summary of Important Noxious Weeds in San Juan County, Their Threats and Current Status:

Class A Noxious Weeds that Must be Eradicated by Law in San Juan County:

Weed	Threat	Status in San Juan County
Bighead knapweed	invades wetlands, meadows	all known plants removed from public lands
Buffalobur	injurious to livestock	all known plants eradicated, occasionally reintroduced as a bird seed contaminant
Common cordgrass	destructive to intertidal habitats	all known sites excavated or chemically treated
Eggleaf spurge	invades dry open grasslands, toxic	known from 2 sites and is being eradicated by Land Bank personnel on the West Side Preserve
Giant hogweed	strongly phototoxic, erosion threat	all known plants eradicated, sites monitored for seedlings
Milk thistle	toxic to livestock, invades grasslands	all known plants eradicated
Shiny geranium	invades and dominates woodland ecosystems	known only from Moran Park and Posey Island , closely monitored and destroyed when noted
Slenderflower thistle	crowds out forage crops	known from 2 sites and is being eradicated by Land Bank personnel on the Frazer Homestead Preserve
Spanish broom	dominates open grasslands	all known plants eradicated
Velvetleaf	out competes agricultural crops	all known plants eradicated
Clary sage	threat to grasslands	one seedling found in a nursery pot and destroyed in 2011

Class B and C Noxious Weeds for which Control is Advised but Not Mandatory:

Common Fennel	colonizes grassland and disturbed areas	spreading from gardens, ornamental plantings. Being controlled where noted on public rights-of-way.
Common tansy	toxic to livestock, invades grasslands	isolated patches on Orcas, Lopez and San Juan. Extirpated from 2 sites on Orcas.
English and Irish (Atlantic) ivy	smothers trees and native flora	spreading into forests from ornamental plantings
Eurasian milfoil	destructive to ponds, streams	presence not confirmed
Garden loosestrife	dominates wetlands	contained
Gorse	fire hazard, invades open woodlands, meadows	currently a threat on eastern Orcas Island
Knapweed, diffuse	dominates pastures, low forage value	all known plants eradicated
Knapweed, meadow	dominates pastures, low forage value	spreading into pastures from roadsides. Controlled by mulching in selected areas.
Knapweed , spotted	dominates pastures, low forage value	spreading along rights-of-way from Friday Harbor
Lawnweed	dominates areas with high foot	limited to outer island campgrounds

	traffic	
Parrotfeather	destructive to wetlands, ponds	contained
Perennial sowthistle	invades grasslands	contained
Poison hemlock	toxic, invades wetlands, grasslands	spreading into pastures on Lopez, San Juan Islands
Policeman's helmet	destructive to wetlands	contained
Purple loosestrife	destructive to wetlands	being controlled with biological agents
Scotch broom	dominates open grasslands, fire hazard	abundant throughout county
Scotch thistle	dominates disturbed areas and grasslands	all known plants removed from public lands.
Spurge laurel	toxic, threat to forest diversity	spreading from ornamental plantings
Sulfur cinquefoil	out competes pasture grasses, low forage value	spreading from roadsides into pastures, hay meadows
Tansy ragwort	toxic, invades grasslands, open woodlands	slowly being reduced in some areas, spreading in others
Yellow archangel	destructive to wetlands, displaces native flora	spreading from ornamental plantings
Wand loosestrife	dominates wetlands	known only in private gardens

Class B and C Noxious Weeds for which Control is Advised but Not Mandatory:

Weed species	Threat	Status in San Juan County
Blackberry, Evergreen and Himalayan	dominates meadows and open woodlands	ubiquitous throughout the county
Bindweed, field	overtakes gardens, hedgerows	scattered throughout county
Butterfly Bush	dominates grasslands, riparian areas, open woodlands	may spread from ornamental plantings
Common catsear	dominates natural areas	abundant throughout county
Fragrant waterlily	overtakes ponds	scattered on Orcas, San Juan
Herb Robert	threat to forest floor diversity	spreading into woodlands and natural areas
Knotweeds (Giant spp)	destructive to wetlands, riparian zones	may be spreading near Eastsound and near Yacht Haven Rd (San Juan Island)
Myrtle spurge	toxic, dominates dry disturbed areas	Contained but may spread from ornamental plantings
Old man's beard	overtakes woodlands, smothers trees	spreading near Eastsound and on the west side of San Juan Island
Orange hawkweed	dominates grasslands	All known plants dug out. Known only from one stand in Eastsound
Reed canary grass	overtakes wetland, hay meadows	prevalent on all major islands
Smoothseed alfalfa dodder	parasitic on alfalfa and other plants	documented only from one site on Orcas (eradicated) and one site on San Juan Island
St John'swort	phototoxic toxic to light skinned livestock	spreading in open dry areas
Thistle, Canada and bull thistle	overtakes grasslands, degrades forage	abundant throughout the county
Yellow flag iris	toxic to livestock, dominates wetlands	spreading along pond edges, in slow streams and in wet ditches

Weeds Not Listed by the State but of Special Concern. Control is Encouraged but Not Mandated:

Bur chervil	degrades meadows, displaces forage grasses	occasional dense but isolated populations on San Juan Island
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English hawthorn	densely colonizes grasslands	spreading in meadows and prairies, especially in the Bailer Hill area and Eastsound
English holly	displaces native forest understory flora	becoming abundant throughout the county
English laurel	displaces native plants in woodlands, meadows	spreading from ornamental plantings
Non native lupine species	Potentially toxic, invades grasslands	spreading from roadsides into pastures and meadows
Italian arum	toxic, invasive in open woodlands	spread by birds and by rhizomes from gardens
Mole spurge	invades dry meadows, toxic	Contained but may spread from ornamental plantings
Pampas grass	potentially invasive in grasslands	Contained but may spread from ornamental plantings
Periwinkle	forms dense monocultures, displacing native plants	spreading along roadsides and in woodlands from private gardens and old homesteads
Teasel	overtakes wetlands, roadside ditches, meadows	becoming abundant throughout the county

