

PATUA GEOTHERMAL PROJECT NOXIOUS WEED ABATEMENT PLAN

Prepared for:

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Patua Geothermal Project Noxious Weed Abatement Plan

PROJECT SUMMARY

The Patua Geothermal Project is proposed on BOR and private lands from approximately 1 mile east of Fernley (proposed transmission corridor) along Alternate Highway 50 and north into the Fernley Wildlife Management Area, to approximately 1 mile west of Hazen, north to the Hot Spring Mountains, and east to Black Butte, Nevada. The project location includes sections and/or portions of sections 4, 8 - 10, 15-21 and 28-32, Township 20 North, Range 26 East in Churchill County, sections and/or portions of sections 10 and 13-16 in Lyon County, and portions of section 6, Township 19 North, Range 26 East. Gradient Resources, Inc is proposing to design, construct, and operate geothermal well pads and wells, geothermal fluid pipelines, transmission lines, and their associated access roads, on lands that are managed by the Bureau of Reclamation (BOR). These facilities would be connected to a geothermal power generation facility, capable of producing 60 megawatts (MW) net of electricity, to be located on a privately owned section of land (Section 21, T20N, R26E, MDBM).

INTRODUCTION

The primary focus of this noxious weed abatement plan is to eradicate Nevada State listed noxious weeds on lands proposed for ground disturbance and travel routes, and to prevent the establishment and spread of noxious weeds within the project area pre, post, and during construction. Surveys were completed in spring, summer and fall of 2009, spring of 2010 and spring of 2011 which identified, delineated, and mapped noxious weed infestations throughout the proposed project area (Appendix A - 2009, 2010 and 2011 Botanical Resources Survey Report(s)). Appendix B presents the maps of the noxious weed infestations for the Patua Geothermal Project Area.

Nevada Noxious Weed Revised State (NRS) states:

“The Inspection and Destruction of Noxious Weeds Section of NRS 555 advises that the control of noxious weeds is the responsibility of every landowner or occupant.

- NRS 555.150 - Every landowner or occupier, whether private, city, county, or federal shall cut, destroy, or eradicate all noxious weeds as required by the state quarantine officer.
- NRS 555.160 - The state quarantine officer shall ascertain the name of the owner or occupant of infested lands. The state quarantine officer may serve notice in writing upon the owner or occupant to cut, destroy, or eradicate the weeds within such a time and in such a manner as described in the notice.
- NRS 555.170 “Should the owner/occupant fail, neglect, or refuse to comply, the state quarantine officer may notify the board of county commissioners for the county in which the property is situated”.

The Bureau of Land Management (BLM) defines a noxious weed as a plant that interferes with management objectives for a given area of land at a given point in time (BLM 1996). The State of Nevada defines noxious weeds as any species of plant which is, or liable to be, detrimental or destructive and difficult to control or eradicate... (Nevada Revised Statute [NRS] 555.005). The Nevada Department of Agriculture and the BLM Nevada State Office maintain a Nevada Noxious Weed List which was used as a reference for the survey (Appendix C – Nevada Noxious Weed List).

An integrated management approach will often prevent the establishment and spread of noxious weeds, and can be environmentally safe. Weed control by integrated management may include the use of cultural, mechanical, and chemical techniques. Biological controls may not be appropriate for the purposes of this project and will not be addressed.

Cultural control prevents weed invasion and increases the effectiveness of other weed control methods. Examples of good cultural practices include seeding areas devoid of vegetation, proper land management, use of weed-free seed and mulches, and use of machinery and equipment that are not contaminated with weed seeds. Interim seeding of growth medium stockpiles, berms, and other disturbed surfaces with aggressive annual species (e.g., rye, barley wheat) can often be an effective means of controlling the spread of weeds.

Mechanical control methods physically damage or destroy the weed. Mechanical control includes hand pulling, cultivation, mowing, and root plowing. All of these methods involve the use of tools to physically cut off, cover, or remove undesirable plants from the soil. The use of fire is another mechanical method of controlling weeds. Burning can be useful in reducing the number of weed seeds which would fall to the ground if burning is conducted while seeds remain on the plant. Burning will not kill most of the seeds that have already fallen to the ground. Flooding is another method which works best on weeds adapted to dry sites. Use of mechanical control is dependent upon knowledge of the reproductive strategies of the target weed species. For some weed species, mechanical actions create conditions favorable to the plant, or spread plant reproductive parts to new areas.

Chemical control is a technique where herbicides are used for killing or inhibiting plant growth. Herbicides are often necessary in order to reduce the weed population to a level where non-herbicidal methods can be effective. When herbicides are necessary, an integrated pest management approach to weed control will reduce the amount of herbicide needed and discourage haphazard and wasteful herbicide use. Important considerations in a chemical control program are safety to the environment and individuals applying the herbicides, cost to apply, and effectiveness of the material used.

Objectives:

The objectives of noxious weed management are to:

- identify and map noxious weed locations
- delineate, and if necessary, flag the boundaries of the infestations
- control the spread through treatment
- eradicate known infestations
- monitor for new infestations
- maintain control through surveys and treatment, as necessary

NOXIOUS WEED MANAGEMENT

Control of existing noxious weeds on site during construction of and upon completion of the Patua Geothermal Project will be the sole responsibility of Gradient Resources, Inc.

A.) Pre Construction Period

Surveys were conducted to document, GPS and map all locations of noxious weeds. Mapping information and reporting complies with statewide mapping database and reporting protocol requirements (Appendix A). Large infestations of tall whitetop (*Lepidium latifolium*) and saltcedar (*Tamarix ramosissima*) were found occurring within the project limits. Four other noxious weed species have been documented in small infestations, and include purple loosestrife (*Lythrum salicaria*), water hemlock (*Cicuta maculata* var. *angustifolia*), sowthistle (*Sonchus arvensis*) and Russian knapweed (*Acroptilon repens*). The phenology of noxious weeds was documented during the survey to provide the appropriate timing for treatments.

Surveys were completed for existing noxious weeds along the access roads where control measures should be implemented prior to project onset. All noxious weed locations need to be mechanically and/or chemically treated prior to flower or seed set, if possible. All equipment should arrive on the construction site pre-washed and weed-free.

Gradient Resources, Inc. will contract with a licensed weed control company to conduct a weed control program consisting of an herbicide spraying, mowing, and/or mechanical removal. It is anticipated that two spray applications and/or mowing per year will be conducted, late spring and late summer. The applications and/or mowing will be timed to target noxious weeds at the appropriate growth stage or prior to seed set.

The movement of existing and introduction of new noxious weeds may be reduced by conducting inspections for noxious and weedy species at any borrow sources prior to construction. All planned disturbance areas and travel routes will be inspected prior to construction activities for noxious weeds. Other weedy plant species such as cheatgrass (*Bromus tectorum*) or halogeton (*Halogeton glomerata*) should also be noted during the inspections to prevent other types of weed infestations.

Removal of the noxious weeds by mechanical means during seed set will likely increase the number of plants that sprout the following spring and is not recommended. During mechanical removal of weeds that are in fruit/seed, all weedy material will be containerized or covered before transporting and disposing of them to prevent distribution along haul routes.

B.) Construction Period

Gradient Resources, Inc. will implement Best Management Practices (BMP's) to prevent erosion of the job site and the potential transport of weedy material on to or off of the job site during rainfall and storm-water events. Only certified fiber rolls (excelsior or rice straw) will be used for sediment containment. In addition, manufactured erosion control products will be utilized (silt fencing, geotextile fabrics, etc.)

Noxious weed-free staging areas will be selected for project construction. Movement of equipment and soils from areas with known noxious occurrences must be washed with power or high-pressure, cleaning off all mud, dirt, and plant parts, on tires and the under carriage in a designated washing station before proceeding to weed-free areas. Washing stations need to be located adjacent to weed infested areas so that equipment does not spread noxious weed seed or plants/roots during movement to the washing station from the work site. When cleaning equipment, sufficient BMP structures (excluding straw bales) must be used to contain the wash water and soils.

Soils from washing stations and other known noxious weed infested areas need to be disposed of at the nearest landfill or designated disposal areas, and the areas tracked to prevent the spread of noxious weeds to other areas. If noxious weed infested soils are used for fill material, it will be placed at a depth as to not allow for germination of the seeds.

Ground disturbance and vegetation removal will be minimized to the extent possible and practical.

The entrances to the job site will be restricted to vehicles or other traffic that may transport weed seeds or plant material.

All workers will inspect and clean their boots, clothing and tools to prevent weed seeds and/or plant parts from spreading to weed-free sites after working in noxious weed infested areas. Washing stations will also serve as the locations for these purposes. Gradient Resources, Inc. will inform and instruct all on-site workers of the washing and cleaning requirements. All equipment must be thoroughly cleaned when operating in weed-infested areas prior to mobilizing to another location. Gradient Resources, Inc. will provide training to management, workers, and equipment operators on the identification of noxious weeds and the importance of noxious weed control and measures to minimize their spread.

Noxious weed infested areas will be avoided to the greatest degree possible. Top soil or fill will not be salvaged from known noxious weed locations.

Documentation, follow-up monitoring and evaluation of the effectiveness of control/treatment measures will be conducted monthly during the growing season of project implementation to provide current information for all noxious weed and weedy species locations. Monthly reports will be submitted to Gradient Resources, Inc. until such time that all noxious weed infested areas have been identified and mapped, and those areas have been treated or stripped. The weed control program will be continued until such time (for approximately 3 years) the re-vegetation species are established, and are self-maintaining. Weed management and vegetation maintenance, success will continue throughout the life of the project.

Post Construction Period

Upon completion of construction related activities, monitoring will be conducted in all treated sites for weed infestations. Vulcan Power Company will assume responsibility for noxious weed management after project completion.

Disturbed areas slated to be re-vegetated will use soil components and mulches obtained from non-weed infested sources. Seed and other plant materials will be checked and certified noxious weed-free and with a weed count in compliance with State and Federal seed laws.

MONITORING

Monitoring is used to determine if treatments have been effective and to identify new occurrences as soon as possible. Early detection of emerging plants is important for effective follow-up treatment. Most noxious weeds produce seed that will remain viable for three or more years. Some species of *Lepidium* will remain viable for more than 40 years. Therefore, treatment areas should be carefully mapped, monitored and treated as necessary, monthly and bi-annually after project completion. Areas adjacent to treated areas should also be examined for emerging plants that may have established from seeds dispersed before treatment achieved complete control.

Management and workers should become familiar with the noxious weeds present on site and others that have been identified in the vicinity. Early detection provides the opportunity for the most effective treatment. Contractors can conduct informal monitoring during their routine field activities if they are aware of the species that already occur, or are likely to occur, on the site, and report/document them for treatment.

PROPOSED TREATMENT PLAN

The following list of invasive weed species and treatment plans were developed for noxious weed species known to occur within the project area. There may be additional noxious weed species identified in the general area that are not included in the following treatment plans that will need to be addressed on an individual basis. The proposed treatment plan represents potential control treatments. Alternative treatments will be considered with state approved herbicide products and methodologies.

Note: The following herbicides are effective in killing broad-leaf (dichotomous) plants. Caution should be taken for treatment applications near water, desirable native vegetation, and/or revegetation treatment areas.

- 1.) Purple loosestrife (*Lythrum salicaria*)
 - a.) Mechanical Control

In areas where there are few plants and easy access, manually removing the plants is recommended. It is important to dispose of the plants away from the water. Allow the plants to dry out, then burn if possible. Pulling purple loosestrife by hand is easiest when plants are young (up to two years) or in sand. Remove as much of the root system as

possible, as broken roots may sprout new plants. Removing flowering spikes will prevent this year's seeds from producing more plants in future years as each mature plant can produce over 2 million seeds per year. Remove last year's dry seed heads, as they may still contain seeds. Cut the stems at the ground to inhibit growth.

b.) Cultural Control

Purple loosestrife is a showy plant and is often introduced as an ornamental plant in home gardens. Maintaining the native vegetation in riparian areas and ephemeral drainages greatly reduces the potential for the species to establish new infestations, but does not eliminate the potential.

c.) Herbicidal Control

A 2,4-D formulation labeled for use near water applied as a 2% solution (2 gallons 2,4-D per 100 gallons of water) or (2.6 fl. oz./gallon of water) will prevent seedling establishment when applied in early fall or spring before the plants can establish perennial characteristics. Garlon 3A (triclopyr) Garlon is a selective broadleaf herbicide that will not kill cattail or other desirable monocot species. Garlon will provide good to excellent purple loosestrife control when applied in the pre to early flower or late flower growth stages. Garlon should be applied as a 1 to 2% solution (1 to 2 gallons Garlon per 100 gallons of water or 1.3 to 2.6 fl. oz./gallon of water) and will provide some residual seedling control. Garlon can be applied in dryland sites but should not be used in landscapes or flower beds because soil residual of the herbicide may prevent establishment of other horticultural plants.

d.) Implementation

It is important to use only Garlon 3A formulation labeled for use in wetland sites. Minimize overspray to open water. See label for precautions for use near potable water intakes. Treatment should be followed by good management of existing desirable vegetation, and establishing vegetation on denuded areas to reduce the spread. It is recommended to use herbicides at least once annually until the infestation is eliminated.

2.) Saltcedar (*Tamarix ramosissima*)

a.) Mechanical Control

Successful saltcedar control requires killing the root system. Methods include ripping large plants out by the roots with equipment, pulling small plants by the roots using hand labor. Salt cedar produces an extensive root system, including a deep tap root and lateral roots. Cutting the stem results in profuse sprouting of new shoots from the lateral roots, which are supplied with water and nutrients by the taproot. Disking or plowing generally does not prevent the taproot from generating new sprouts. Mechanical control of salt cedar is generally not an accepted practice, unless combined with application of herbicide to the cut stems. When existing saltcedar plants are removed from an area, seedlings must be controlled for at least one year to prevent re-infestation.

b.) Cultural Control

Maintaining the native vegetation in riparian areas and ephemeral drainages greatly reduces the potential for the species to establish new infestations, but does not eliminate the potential. Where the species already exists, it spreads easily into established native vegetation. The pollen-sized seeds are readily transported by wind and water, and grow rapidly in moist soil.

c.) Herbicidal Control

Herbicides or herbicides combined with mechanical treatment have been the most effective methods to control saltcedar. Treatment of newly established or young plants can be accomplished with foliar application of Arsenal (imazapyr) and a surfactant or a combination of Arsenal, Roundup (glyphosate), and a surfactant. Arsenal is registered for use only on non-cropland with restrictions when treated areas are to be grazed. Roundup

is registered for rangelands and Rodeo is a similar product (i.e., active ingredient is glyphosate) that is formulated for aquatic/riparian sites. It is also recommended that treated saltcedar be left undisturbed for at least two growing seasons following application for best results.

Caution: Both imazapyr and glyphosate are non-selective herbicides that will also control non-target species. Therefore, foliar application is likely to impact native species present in the understory or vegetation adjacent to saltcedar. Seeding of adapted perennial species is recommended following eradication of the salt cedar to prevent other noxious weeds from establishing on the site.

Treatment of large shrubs and tree-sized plants is most effective using the stump cut and spray method. The stem of the plant is completely severed near ground level and herbicide is applied immediately (within minutes). Saltcedar is able to begin sealing cut surfaces within one hour. This response prevents movement of the herbicide into the roots and reduces mortality. Triclopyr ester is the most effective herbicide available for the cut stump and spray method. Pathfinder II contains 14 percent triclopyr ester and is designed to be used from the container with no additional mixing required. Garlon also contains triclopyr and can be used at a rate of five percent total spray volume (1.5 pints/gallon). Some sprouting will occur following treatment with the cut stump and spray method. A spring foliar application to young shoots, as described above, should be included as part of the saltcedar treatment, with application conducted during the growing season after treating with the cut stump and spray method.

d.) Implementation

The appropriate herbicidal treatment should be applied to the different age classes of saltcedar. Close proximity to watercourses should employ a mixture of Rodeo and surfactant for young plants. Where salt cedar occurs in a riparian/moist soil area, consideration should be given to seeding with creeping wildrye (*Elymus triticoides*), alkaligrass (*Puccinellia distans*), alkali sacaton (*Sporobolus airoides*), or desert saltgrass (*Distichlis spicata*) following control or substantial reduction in population of salt cedar. The species listed are all saline tolerant, a characteristic of saltcedar sites.

3.) Tall whitetop, Perennial pepperweed, (*Lepidium latifolium*)

a.) Mechanical Control

Deep-seated rootstocks make this weed difficult to control. The extensive creeping root system produces an infinite number of new plants when disturbed. Clean cultivation every several weeks until root stocks fail to grow and continual top mowing to reduce plant food storage and to stop seed scatter are mechanical control options. These control methods may not be practical on all sites, and hand cutting of tops of plants followed by herbicide applications may be necessary.

b.) Cultural Control

Tall whitetop grows best in bright, sunny areas. Soils can be fine or coarse, but must be moist for part of the growing season. The weed reaches its maximum growth where soils are irrigated or roots extend into the water table. Tall whitetop spreads slowly into healthy, competing vegetation. Well-stocked stands of perennial grass and tall-growing brush are good competitors, but they cannot prevent the spread of tall whitetop if proper growing conditions exist.

c.) Herbicidal Control

Several different herbicides will kill the aerial portion of tall whitetop plants, but translocation of herbicides to the roots is very limited. The rapid response of the extensive root system to partial control makes it necessary to attain very close to total control in order to suppress this weed. All herbicide treatments require several years to achieve control. Herbicides providing the most consistent control of tall whitetop are Weedar -64, 2-4D, Telar, Plateau, Rodeo, and Escort. Repeat applications for a minimum of three and up to six years may be needed. Telar is used for non-selective control by soil sterilization. Desirable plants can be damaged. Telar can be applied anytime there is moisture from rainfall to wash it into the ground. Repeat applications may be necessary.

d.) Implementation

Treatment of this weed with herbicides is the only viable option because of the repeat treatments required when using mechanical control. Tall whitetop will readily expand along roads and other disturbed sites and will slowly spread into weed free areas. Treatment should be followed by good management of existing desirable vegetation, and establishing vegetation on denuded areas to reduce the spread. It is recommended to use herbicides at least once annually.

4.) Russian knapweed (*Acroptilon repens*)

a.) Mechanical Control

Mechanical control is not a recommended treatment unless it is combined with an herbicide treatment and cultural control. Intensive cultivation, followed by planting a competitive crop and a fall application of herbicide may achieve an 85 percent reduction in plant density. Indiscriminate plowing and cultivation will rapidly spread Russian knapweed because the plant has the ability to reproduce from broken root pieces.

b.) Cultural Control

This species is capable of invading landscapes where the precipitation is greater than 15 inches annually. In drier sites, Russian knapweed requires bare ground or disturbance to become established. Therefore, maintaining competitive vegetation within the drier landscapes is recommended.

c.) Herbicidal Control

Several herbicides are available for the control of Russian knapweed, but all require several years of application before eradication can be achieved. Herbicide treatment should be followed by seeding to establish perennial grasses in the void left by the knapweed. Roundup (glyphosate) is effective on monotypic stands of Russian knapweed, but will kill established grasses in non-monotypic stands. Tordon (picloram) is a restricted-use herbicide and requires a licensed applicator. Tordon herbicide will eradicate Russian knapweed applied at the rate one to one and one-half pounds active ingredient per acre. Repeat applications of Tordon are needed to control new growth after initial application. An application of 2,4-D applied at four pounds of active material per acre, repeated spring and fall for several seasons, will reduce Russian knapweed by 85 percent. The usual 2,4-D application rates of up to 2 pounds per acre will have very little effect. Spike can be used on non-crop areas for complete vegetation control.

d.) Implementation

Russian knapweed control depends on: (1) spot eradication with chemicals that will destroy the extensive root system; or (2) reducing stand density by using combinations of cultivation, competing plants, and herbicides. Cultivation may not be applicable or practical for the project area.

5.) Sow thistle (*Sonchus arvensis*)

a.) Mechanical Control

Hand pulling of individuals prior to seed set is suitable for small infestations. Depending on the timing and type, tillage can reduce perennial sowthistle stands. Tillage at the seven to nine leaf rosette stage seems to work best for reducing the reproductive capacity of the roots. Depth of burial and amount of root breakage determine the effectiveness of tillage. Root fragments left on the soil surface die from desiccation, and those buried 30 cm or more are unlikely to resprout. However, roots buried at intermediate depths will produce new shoots.

b.) Cultural Control

Seeding after control with herbicides can prevent re-establishment. Maintaining competitive vegetation within the landscape is recommended.

c.) Herbicidal Control

Herbicide control of perennial sowthistle is better when combined with other control methods because the species is relatively resistant to many common broadleaf herbicides. Most chemical control recommendations for perennial sowthistle are for auxin-type herbicides. Amitrole, dicamba, MCPA amine, and 2,4-D amine have all been recommended for control at various growth stages. Pre-harvest treatments of glyphosate have been successful, but fall applications were generally less effective than auxin-based herbicides. The species has also been shown to be susceptible to atrazine, simazine, bromacil, monuron, and diuron, as well as some sulfonylurea herbicides. Treating sowthistle with herbicides may entail repeated applications for a couple of years.

d.) Implementation

Recommend applying Amitrole or 2,4-D amine during the spring prior to seed set. 2,4-D should not be applied near sensitive crops.

6.) Water hemlock (*Cicuta maculata* var. *angustifolia*)

a.) Mechanical Control

Hand grubbing is a very effective method of removing water hemlock. The roots must be entirely removed because they are attractive to grazing livestock and highly poisonous. This plant is easily removed when the ground is moist. Gather all the plant pieces after removal and burn them. It highly recommended to wear gloves and protective clothing when hand grubbing this toxic plant species.

b.) Cultural Control

Water hemlock grows where water is abundant. Water hemlock is pulled out of the ground very easily in areas where the ground is moist and soft. Controlling the access of grazing animals to habitats where water hemlock grows may reduce the risk of poisoning.

c.) Herbicidal Control

The herbicide tebuthiuron provides pre-emergence control of water hemlock plants, as does chlorsulfuron and a combination of chlorsulfuron and metsulfuron. The pre-emergence photosynthetic inhibitors hexazinone, metribuzin, and terbacil also provide great control of poison hemlock. Post-emergence application of phenoxy herbicides or glyphosate can be effective, with best results when applied in early spring. Treating water hemlock with herbicides may entail repeated applications for a couple of years.

d.) Implementation

For water hemlock, application of chemicals is most effective when done in late spring or early summer. Glyphosate, 2,4-D, and picloram will all provide excellent control of western water hemlock. Apply 2,4-D or MCPA to water hemlock at a rate of 2 lb ae/A in the early bolting stage of growth. Chemical application is an effective means of control, but there is some evidence that the toxicity of the plant increases after spraying until the plant dies. Most animal losses take place in the spring or after the plants were sprayed with chemicals. Therefore, keep animals away from treated plants for 3 weeks after

spraying. Repeat herbicide application until eradication is accomplished.

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Appendix A
BOTANICAL RESOURCES SURVEY REPORT
CHURCHILL AND LYON COUNTIES, NEVADA

See Appendix D of EA

**Appendix B
Noxious Weed Occurrence
Maps**

See Figure 2 of Appendix D of EA

Appendix C

You are here: [Home](#) / [Invasive and Noxious Weeds](#) / Invasive and Noxious Weeds Results

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Invasive and Noxious Weeds

[NRCS Invasive Species Policy](#)

[Invasive Species Executive Order 13112](#)

Nevada State-listed Noxious Weeds

52 records returned

Click on an accepted name below to view its PLANTS Profile with more information, and web links if available. Noxious weeds that are synonyms retain their noxious status, and are indented beneath the current PLANTS accepted name.

Nevada Administrative Code. 2003. [Control of insects, pests, and noxious weeds](#) (20 October 2003). State of Nevada.

<u>Symbol</u>	<u>Scientific Name</u>	<u>Noxious Common Name</u>	<u>State Weed Status†</u>	<u>Native Status*</u>
ACRE3	Acroptilon repens (L.) DC.			L48 (I), CAN (I)
CERE6	<i>Centaurea repens</i> L.	Russian knapweed	NW	
ALMA12	Alhagi maurorum Medik.			L48 (I)
ALCA	<i>Alhagi camelorum</i> Fisch.	camelthorn	NW	
ANCO2	Anthemis cotula L.	mayweed chamomile	NW	L48 (I), AK (I), HI (I), CAN (I)
CADR	Cardaria draba (L.) Desv.	whitetop, hoary cress	NW	L48 (I), CAN (I)
CANU4	Carduus nutans L.	musk thistle	NW	L48 (I), CAN (I)
CECA2	Centaurea calcitrapa L.	purple starthistle	NW	L48 (I), CAN (I)
CEDI3	Centaurea diffusa Lam.	diffuse knapweed	NW	L48 (I), CAN (I)
CEIB	Centaurea iberica Trevir. ex Spreng.	Iberian starthistle	NW	L48 (I)
CEME2	Centaurea melitensis L.	Malta thistle	NW	L48 (I), HI (I), CAN (I)
CESO3	Centaurea solstitialis L.	yellow starthistle	NW	L48 (I), CAN (I)
CESTM	Centaurea stoebe L. ssp. micranthos (Gugler) Hayek			L48 (I), HI (I), CAN (I)
CEMA4	<i>Centaurea maculosa</i> auct. non Lam.	spotted knapweed	NW	
CEVIS2	Centaurea virgata Lam. ssp. squarrosa (Willd.) Gugler			L48 (I)
CEVIS	<i>Centaurea virgata</i> Lam. var. <i>squarrosa</i> (Willd.) Boiss.	squarrose knapweed	NW	

CHJU	<i>Chondrilla juncea</i> L.	rush skeletonweed	NW	L48 (I), CAN (I)
CIMA2	<i>Cicuta maculata</i> L.	water hemlock	NW	L48 (N), AK (N), CAN (N)
CIAR4	<i>Cirsium arvense</i> (L.) Scop.	Canada thistle	NW	L48 (I), AK (I), CAN (I), GL (I), SPM (I)
COMA2	<i>Conium maculatum</i> L.	poison hemlock	NW	L48 (I), CAN (I)
CRVU2	<i>Crupina vulgaris</i> Cass.	Common crupina	NW	L48 (I)
CYOF	<i>Cynoglossum officinale</i> L.	houndstongue	NW	L48 (I), CAN (I)
EUES	<i>Euphorbia esula</i> L.	leafy spurge	NW	L48 (I), CAN (I)
GAOF	<i>Galega officinalis</i> L.	goats rue	NW	L48 (I), CAN (I)
HYVE3	<i>Hydrilla verticillata</i> (L. f.) Royle	Hydrilla	NW	L48 (I)
HYNI	<i>Hyoscyamus niger</i> L.	black henbane	NW	L48 (I), CAN (I)
HYPE	<i>Hypericum perforatum</i> L.	Klamath weed	NW	L48 (I), HI (I), CAN (I)
ISTI	<i>Isatis tinctoria</i> L.	dyer's woad	NW	L48 (I), CAN (W)
LELA2	<i>Lepidium latifolium</i> L.	perennial pepperweed	NW	L48 (I), CAN (I)
LIDA	<i>Linaria dalmatica</i> (L.) Mill.	Dalmatian toadflax	NW	L48 (I), CAN (I)
LIVU2	<i>Linaria vulgaris</i> Mill.	yellow toadflax	NW	L48 (I), AK (I), CAN (I), GL (I), SPM (I)
LYSA2	<i>Lythrum salicaria</i> L.	purple loosestrife	NW	L48 (I), CAN (I), SPM (I)
LYVI3	<i>Lythrum virgatum</i> L.	purple loosestrife	NW	L48 (I)
MYSP2	<i>Myriophyllum spicatum</i> L.	Eurasian water-milfoil	NW	L48 (I), AK (I), CAN (I)
ONAC	<i>Onopordum acanthium</i> L.	Scotch thistle	NW	L48 (I), CAN (W)
PEHA	<i>Peganum harmala</i> L.	African rue	NW	L48 (I)
PORE5	<i>Potentilla recta</i> L.	sulfur cinquefoil	NW	L48 (I), CAN (I)
ROAU	<i>Rorippa austriaca</i> (Crantz) Besser	Austrian fieldcress	NW	L48 (I), CAN (I)
SAAE	<i>Salvia aethiopsis</i> L.	Mediterranean sage	NW	L48 (I)
SAMO5	<i>Salvinia molesta</i> Mitchell	giant salvinia	NW	L48 (I), HI (I)
SOCA3	<i>Solanum carolinense</i> L.	Carolina horsenettle	NW	L48 (N), CAN (I)
SOEL	<i>Solanum elaeagnifolium</i> Cav.	white horsenettle	NW	L48 (N), HI (I), PR (N)
SOAR2	<i>Sonchus arvensis</i> L.	sowthistle	NW	L48 (I), AK (I), CAN (I), SPM (I)
SOAL	<i>Sorghum alnum</i> Parodi	Columbus grass	NW	L48 (I)
SOB12	<i>Sorghum bicolor</i> (L.) Moench	perennial sweet Sudan	NW	L48 (I), HI (I), PR (I), VI (I), CAN (I)
SOHA	<i>Sorghum halepense</i> (L.) Pers.	johnsongrass	NW	L48 (I), HI (I), PR (I), CAN (I)
SOPR3	<i>Sorghum propinquum</i> (Kunth) Hitchc.	Sorghum	NW	
SPSA3	<i>Sphaerophysa salsula</i> (Pall.) DC.	Austrian peaweed	NW	L48 (I), CAN (I)
TACA8	<i>Taeniatherum caput-medusae</i> (L.) Nevski	medusahead	NW	L48 (I)

TAPA4	<i>Tamarix parviflora</i> DC.	saltcedar, tamarisk	NW	L48 (I)
TARA	<i>Tamarix ramosissima</i> Ledeb.	saltcedar, tamarisk	NW	L48 (I)
TRTE	<i>Tribulus terrestris</i> L.	puncturevine	NW	L48 (I), HI (I), CAN (W)

†Code Weed Status

NW Noxious weed

***Code Native Status**

I Introduced

N Native

W Waif

***Code Native Location**

L48 Lower 48 States

US02 Alaska

US15 Hawaii

US72 Puerto Rico

US78 Virgin Islands

CA Canada

GL Greenland

SB St. Pierre and Miquelon

Additional information about noxious plants in this state can be found at:

- [NV-Invasive Weed Identification for Nevada](#)
- [NV-Nevada Agriculture Experiment Station](#)
- [NV-Nevada Division of Plant Industry](#)
- [NV-Nevada Invasive Species Initiative](#)
- [NV-University of Nevada Extension Publications](#)
- [NV-Wanted Weeds of Nevada](#)

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