

TOXIC BEAUTY:  
EXOTIC INVADERS VERSUS NATIVE BEAUTY  
ON COLORADO'S FRONT RANGE

by

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## ABSTRACT

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Toxic Beauty: Exotic Invaders versus Native Beauty on Colorado's Front Range

Thesis directed by Professor Leslie Irvine, PhD,

Most wildland experts agree that indigenous species in the Americas have increased rates of extinction due to the influx of Europe plants. While human development is the main threat to wildland species, today all states have noxious weed boards and lists of troublesome non-native plants. One undesirable newcomer is Myrtle spurge (*Euphorbia myrsinites*), an escaped ornamental garden perennial with toxic properties now increasing on Western wild and agricultural land. In Colorado, the plant is "illegal" and mandated for eradication.

The discourse about exotic, or non-native, plants connects to three areas of sociological interest. Targeting non-native plants for removal requires money, labor and public attention. Second, scholarship has analyzed similarities between discourse about immigrant plants and people. Third, a difference between expert and lay knowledge about ecosystem health is exposed. By observing Myrtle spurge eradication efforts, this thesis explores the way knowledge of plants' "belongingness" or alien status is conveyed, and embraced or ignored by gardeners, homeowners and volunteers recruited to remove it, and the way experts and lay people view the landscape and ecosystem health.

## DEDICATION

This thesis is dedicated to

my mother Althea Sr., who believed in the relevance of beauty,

my father John, who made sure we lived near green, open space,

my son Matt, who explored North America's natural beauty with me, and

all that have shared their beauty with me,

especially my step-children Christy, Alissa and Noah.

Lastly, but vitally, to the plants, gardens and wildish places

that inspire and connect us to the diversity and splendor of life.

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Thanks to all my friends who care about nature, the time you spent with me on the trail, in the garden and yes, at the pub made this a lot more fun.

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## TOXIC BEAUTY: ERADICATING MYRTLE SPURGE FROM COLORADO'S FRONT RANGE

Humans have cultivated plants for ten thousand years, and today almost 38 percent of Earth's land is under cultivation (World Bank 2014). Agricultural plants accompanied each migration and conquest, demonstrated in England's walnut trees, brought by the Romans. Other examples are easy to find in Europe, where the arrival of foreign animals and plants was generally regarded as positive. European colonists had no hesitation about bringing Old World plants along as they settled the Americas. New food plants like corn, potatoes and tomatoes were sent to Europe, and the benefit to world food production is a recognized factor in population growth. Periodically through the centuries, there had been criticisms of some imports, but in 1972, Alfred Crosby's *The Columbian Exchange: The Biological and Social Consequences of 1492* assessed the negative effects non-native organisms had on the ecological health of both hemispheres. Crosby's book ended with the speculation that indigenous species in the Americas had suffered much higher rates of extinction due to the influx. Despite this cautionary message, the exchange has continued, expanding with global economic trade. The imports include ornamental plants, a commercial response to the last 150 years of increasing pressure on homeowners to provide a satisfactory viewing experience for others. Along with the shipments come unintentional companions, unwanted seeds and stowaway pests embedded in the cargo. Even some desirable newcomers are later found to be a nuisance, overtaking native vegetation in wildlands, open spaces and agricultural land. To address their expansion, in 1999 President Bill Clinton signed a bill requiring all states to establish noxious weed boards and create state lists of troublesome non-native plants.

The discourse about exotic, or non-native, plants has connections to three areas of sociological interest. First, the identification of plants as native and non-native has become more pronounced at the turn of the millennium, reaching more people, influencing public spending and legislation. Also, scholarship has analyzed similarities between discourse about immigrant plants and people. Third, a difference between expert and lay knowledge about ecosystem health is exposed. This thesis explores the way knowledge of plants' "belongingness" or alien status is conveyed and embraced by gardeners, homeowners and the volunteers recruited to remove it, and the way experts and lay people view the landscape and ecosystem health., information I gathered during three years of "Purge the Spurge" activities. The plant, Myrtle Spurge (*Euphorbia myrsinites*) is a garden ornamental that "escaped" and is now considered a List "A" noxious weed in Colorado. Under this designation it is illegal to grow and in the language of the Colorado Noxious Weed Act (2003), "subject to eradication wherever detected statewide in order to protect neighboring lands and the state as a whole."

As Sierra Club founder John Muir wrote in 1911, "When we try to pick out anything by itself, we find it hitched to everything else in the Universe." The journey of *Euphorbia myrsinites* from desirable to despicable begins with a history of the private yard in the United States, and how it developed its present form. This includes the people, policies and changing technology that encouraged the pursuit of beauty, belonging and status that has been recognized as part of the American suburban landscape. I review the history and changing status of wilderness/nature, native/non-native plant dichotomies, and the parallels observed in discourse about the environment and human immigrants who have been marginalized. I compare lay and expert knowledge of myrtle spurge using internet blogs and garden website content. I review the designation of landscapes as degraded or endangered by experts, as it is conveyed to the public,

knowledge gained through my participation in group efforts to remove spurge from some of the earliest private landscape plantings from which it spread into wildlands, open spaces and agricultural fields.

My interest in this subject was fueled by a lifelong practice of gardening, including ornamental and food plants, coupled with a love of nature's wilder places. My research methods were enriched and channeled by my experience as a professional garden writer and Master Gardener training, along with experience and training in collecting native plant seeds for restoration efforts. The findings of this study may address the need to understand the split between public's ecocentric attitudes and their anthropocentric behaviors, and propose a link between environmental knowledge and perception of beauty that may explain willingness to invest time and effort into environmental restoration efforts.

## CHAPTER TWO

### LITERATURE REVIEW

#### *Cultivating the Landscape*

The pattern for the design and embellishment of home landscapes was established over centuries, and required the support of multiple institutions, including the government, industry and media. Jackson (1985), Jenkins (1994) and Robbins (2007) explored the history and political economy of the lawn, demonstrating that this “all-American” activity has had multiple supports in its adoption. Collective action and its outcomes are “the basic unit of sociological investigation” (Becker 1988/1986:52), combined action is revealed in “networks of people, however large or extended, whose collective activity made it possible. . .” (Becker 1988:52). The existence of a green, solidly turf grass lawn requires “repeated representation both of the aesthetic ideal and the enormous battery of consumer goods and service that make it possible” (Robbins 2007:8). The groomed landscape that has become the norm has economic, cultural and environmental consequences, due to the cost, time and labor needed by lawn grasses. These include the chemical inputs demanded by lawn grasses and ornamentals. Applied over a large percentage of land in the United States, they add to the toxic load in water and soil, and can be problematic to animals and humans. Robbins demonstrates that users understand these risks but use chemicals despite any misgivings, conforming to social expectations and a “vague trust” in the producers of the chemical products (2007:9-10). But as landscape architect Elizabeth Meyer asks, “Just how beautiful is a green residential lawn maintained by pesticides and herbicides that are harmful to children, pets and songbirds?” (2008:20). A brief history of landscaping and its relation to beauty helps uncover the origin of this dichotomy.

### *Beauty*

For most of history and across cultures, beauty resided in the beautiful object, but this definition changed in the 19<sup>th</sup> century. Emmanuel Kant's definition of beauty —pleasure experienced in the perception of purposeless form, or in the state of harmony between an object's imaginative representation and the pleasurable reaction of its viewer (Lothian 1999:187) persuasively shifted the location of beauty from inherent in the object into the subjective sense of the observer. The argument over the perception of beauty as culturally defined resonates with the symbolic interactionist perspective, where meaning is primary in understanding the social world. Repeated messages between people, expert opinion, and the representations of beauty used as exemplars builds a culturally common understanding of “the beautiful” that is then perpetuated over time. Beauty's definition may differ between social groups and cultures and shifts through technical innovation and other social changes. The changing aesthetic of the suburban yard has this history and has been subject to these forces.

Kant “held nature as the pinnacle of beauty” (Lothian 1999:187), and the ability to appreciate it as significant and morally edifying (Brady 2009). Contemplating nature could give rise to a sense of the sublime, the negative pleasure of comprehending “human insignificance in the face of natural forces” (Brady 2009:314). This has been an important argument for preservation of the wild by environmentalists like Thoreau, Emerson and Muir since the middle of the 19<sup>th</sup> century. Today, this awareness of nature's beauty is articulated by naturalist Terry Tempest Williams, who wrote, “I have felt the pain that arises from a recognition of beauty, pain we hold when we remember what we are connected to and the delicacy of our relations” (Williams 1994:57). Judging from this statement, current experiences of the sublime may include humanity's power over nature, as well as any remaining sense of insignificance felt by observers.

Originating in the 1960s, the study of environmental aesthetics has focused on natural landscapes, and more recently included constructed landscapes like gardens and built environments with plants (Brady 2009). This discipline contributes to our understanding the history and valuation of landscapes, including non-instrumental and unappreciated locations. In my study, it contributes to understanding the differing assessments of natural landscapes by land managers and other viewers. According to Brady, environmental aesthetics has held two theoretical perspectives that differ on the criteria used to define what is beautiful. Cognitive theorists consider scientific knowledge as well as physical form in creating an appropriate assessment. In this view, scientific understanding expands appreciation to the un-scenic and diminishes the cultural subjective assessments that complicate environmental decision-making (Brady 2009). Non-cognitive theory privileges aesthetic value over knowledge. Experiential aspects of sensory immersion, imaginative engagement, and emotional response are relevant indicators of beauty, along with folk knowledge (Brady 2009). This can be seen in studies that reveal a landscape's meaning has a role in people's willingness to engage with it, and to protect it (Davenport and Anderson 2006). This motivation to proenvironmental action has also been triggered by witnessing landscape degradation (Dunlap ###).

A third aesthetic perspective shares principles of both views, arguing that the performance of beauty in the constructed landscape has a role in expanding environmental awareness through somatic stimulation and revelation of the "unrealized relationships between human and non-human life processes" (Meyer 2009:18). In this view, constructing a landscape simultaneously constructs an experience that exposes us to nature, whether that is access trails in wilderness, rural open spaces or densely planted urban gardens. Hence, sustainable design may create "participatory environmental experiences [that] not only break down the barriers between

subject and object; they change us and, at times, have the capacity to challenge us to provoke us to act” (Meyer 2009: 18). While proenvironmental inspiration may be a possibility of good design, the centuries-long construction of the ideal suburban landscape has had less beneficial environmental outcomes.

### *Landscaping Practice*

Although vegetable and fruit gardening have taken place on private property from the earliest settlements, the more recent practice of ornamental gardening comes closer to the Kantian idea of beauty. Although Kant prioritized nature’s beauty over the long-developed European landscape, early European settlers saw little beauty in New World nature, describing the landscape as a “remote, rocky, barren, brushy, wild-woody wilderness” (Cronon 1983:5). Because colonists were accustomed to the more defined landscapes of Europe they could not recognize that Indians in New England (and elsewhere) used land management practices such as controlled burns to cultivate an ecosystem that attracted game animals (Cronon 1983). Nature was not to be admired, but utilized. With a righteous sense of ownership, colonists saw profit in the seemingly endless forests of the New World (Cronon 1983, White 1967). Trees were harvested for profit and local utilitarian uses, and farms replaced forests. Colonists reproduced the agricultural landscape they had left behind, an environmental change seen as “divinely ordained and wholly positive” (Cronon 1983:5). That they reproduced the elements and practices of their former homeland supports the idea that sense of place is “stoutly resistant to change. . . an expression of community involvement. . . [with] social and moral force that may reach sacramental proportions, especially when fused with prominent elements of personal ethnic identity” (Basso 1996:148). This reproduction was itself repeatedly reproduced as European

Americans moved westward, carrying seeds and garden cuttings to their new homes (Wheeler 2009).

Another element influencing gardening practices emerged as environments declined with use and population growth. The harvesting of forests that reshaped New England's topography influenced its climate, leading to flooding, drought-plagued pastures, pools of stagnant water and a new theory of disease—"bad air" (Cronon 1983). This in turn made way for reformers like Frederick Law Olmsted to establish the first urban public parks, designed to be works of art that reproduced the benefits of nature, such as clean air (Meyer 2008) and revitalized the working population (Taylor 1999). The space Olmsted acquired for New York City's Central Park had been the site of the swamps that seemed to produce "bad air"—more accurately mosquitoes carrying cholera. The land also held open landfills, roaming pigs and the lean-to homes of the city's poor. Although they were evicted from their homes, these people were to be welcomed to the newly constructed park—a place meant to include all citizens within its breezy promenades, open air meadows and shady glades. The egalitarian notion was not only for their improved health, but to maintain their vigor for work (Taylor 1999) and promote a cultured state of mind (Meyer 2008). Thus, this park, designed to mimic nature's beauty and minimize evidence of its planning and construction, also contributed to social control and the growing money economy (Taylor 1999).

Additions to the practice of ornamental gardening came during the 19<sup>th</sup> century when exploration into uncultivated areas expanded the number of plants available to gardeners. Botanists and adventurers travelled from Europe to remote regions to find new plants suitable for planting. The rose, so often used as an example of beauty, benefited from discoveries in remote areas of China and Asia Minor. Breeders capitalized on these and just as in any human activity,

collective action produced the possibility of the ornamental gardener (Becker 2002). Just as the artist is the central of the art world, the actor without whom “the work would not be art” (Becker [2002:178]), the gardener is the actor at the center of the gardening world. Like Becker’s artist, both enhanced and bounded by the knowledge and aesthetics of others, the actors in the gardener’s world—gardening professionals, chemical companies and plant breeders and retailers--create peripherals and technologies that greatly expand possibilities for the ornamental gardener.

Although 18<sup>th</sup> century homes were not generally surrounded by grass, the wealthy European pursuit of idealized landscapes serving aesthetic purposes was adopted by some in early America, including founding fathers George Washington and Thomas Jefferson (Jenkins 1994). These were the exception rather than the rule, and contemporaneous accounts of the unkempt appearance of homes in the U.S. seem to be most common (Jenkins 1994). In the 1830s, the increasing wealth of some Americans allowed them to establish lawns and gardens, first in cities and towns (Jenkins 1994). In 1840 landscape architect Andrew Jackson Downing began to promote the ideal of a fine lawn around private homes (Schroeder 1993). In the ensuing decade, the well-off rural land owner was exhorted to act as an example to middle class homeowners by establishing lawns and gardens (Jenkins 1994). As the increasing density of industrializing cities began to push more people out of the city, their move was supported by the ideal of rural home-ownership as a haven from the rough world of commerce. In this developing nation, the ideal home was a single family dwelling separated from its neighbors by land. Over time, that space was increasingly expected to have a lawn and intentional plantings to meet the needs of the home’s viewer rather than its owner (Jenkins 1994, Schroeder 1993).

Early lawns had been a hodgepodge mixture of grasses and low-growing forbs such as clover, likely planted together to insure that some varieties would be successful in uncertain conditions with minimal care (Jenkins 1994). Several factors influenced the shift toward monoculture lawns. Scientists at the U.S. Department of Agriculture began research on grasses, and information on single-variety grass lawns began appearing just before the turn of the 20<sup>th</sup> century (Jackson 1985). The growing popularity of golf was also instrumental in the search for and popularity of turf grasses (Jenkins 1994). Simultaneously, local garden clubs were formed and the National Garden Club was established. Club members established and cared for civic plantings and educated non-gardeners. Magazine articles began to illustrate the lawn as a staple of the emerging U.S. style, punctuated by gardens of flowers or vegetables (Jenkins 1994). This expectation had complete hold after the end of World War II, when the introduction of chemical lawn inputs raised the aesthetic stakes (Jenkins 1994; Schroeder 1993; Jackson 1994; Robbins 2007).

Access to exotic—non-native—plants preceded the mid-20<sup>th</sup> century expansion of capitalist consumerism by millennia, and a few examples can illustrate plants' historical connection with trade and wealth accumulation. Early evidence of trading in spices, seeds and plants comes from the tomb of Queen Hapshepsut, a 15<sup>th</sup> century BC ruler of Egypt (Fry 2009). Spices inspired and funded expeditions during the Age of Exploration. The total cost of Magellan's circumnavigation plus a small profit was realized in the sale of its cargo of cloves (Fry 2009). For a brief time Asian tulips, bred and hybridized by European botanists, made fortunes for speculators in 16<sup>th</sup> century Holland (Pollan 2001; Fry 2009). Medicinal herbs were cultivated in European gardens before the rage for luxury gardens began, and as exploration continued, these collections expanded. Food plants like the potato preceded ornamental

specimens (Fry 2009), but by the 18th century both France and Spain were sponsoring expeditions to collect exotic ornamental plants. The first and failed goal of the Lewis and Clark expedition commissioned by President Thomas Jefferson was a water passage to the Pacific, but its achievement came in the over 130 plant specimens they brought back (Fry 2009) and their descriptions of many more (National Geographic). Highly desirable food plants have inspired “biopiracy”—the tea plant was smuggled out of China—and supported colonialism and slavery—sugar cane plantations established in Americas and Africa (Fry 2009). The tulip was not the only flower that caught the imagination of Europeans. Orchids, roses, and rhododendrons were sought after ornamentals in the 19<sup>th</sup> century. Plant expeditions brought new varieties and species from all continents to botanists and gardeners in Europe, while at the same time planting European seeds in foreign soil (Fry 2009). Today, the selection of plants available to U.S. gardeners contains cultivars from all over the world.

### *Suburbia and Ornamental Gardening*

The preference for suburban living in detached housing was promoted very early in the U.S. As the formerly-feared wilderness lost its sinister reputation, the city became associated with moral decline (Jenkins 1994). Influential writers such as Catherine Beecher and Harriett Beecher Stowe championed semirural locations as the best place to raise a family. Beecher’s book on home management had five chapters on the garden and yard (Jackson 1985). In 1841, the first U.S. book devoted to landscaping was published. Written by landscape architect Andrew Jackson Downing, *A Treatise on the Theory and Practice of Landscape Gardening* made “architecture and landscape gardening enjoyable for a general audience” (Jackson 1985:63). In this and other writings, Downing promoted the individual home as a source of virtue and the

country as the ideal place for its location. A love of nature and nation could be best nurtured in this setting.

Downing's business partner, Calvert Vaux, also deplored the square blocks created by the grid design of most cities. The design had been promoted by the federal government and commercial interests, and was being reproduced in the new towns of the American West. The row homes popular in Europe and older Eastern cities were portrayed as inadequate for the successful family. As transportation improved, it became increasingly possible for one to work in the city and live in the periphery. Land was often inexpensive, and the U.S. experienced many years of prosperity and opportunity for working people (Jackson 1985). The development of an inexpensive building technique, balloon-frame construction, put owning a home into the financial reach of many more people. The technique also simplified construction, so individuals could build homes for themselves. Magazines like *Ladies Home Journal*, *Harper's* and many more supplied inexpensive plans for single family homes. Fences were frowned on, so an expanse of land, sculpted with lawn and garden, was the provisor of privacy and the indicator of success (Jackson 1985). Taxpayer subsidization of transportation projects and roads, added incentive and access to a goal most aspired to achieve—a home in the developing suburbs. Federal housing policies established during the first half of the 20<sup>th</sup> century, mid-century benefits established for military veterans and ongoing racial tensions in inner cities continued to build suburbia (Jackson 1985).

Nature's beauty was important to the early designers of home developments. Presaging the modern suburb, Downing planned a settlement centered on park, with homes built on wide, irregular lots, each with individual gardens. The right-angled streets of the city were replaced with curving streets (Jackson 1985). Outside Chicago, Olmsted and Vaux designed and

developed Riverside, which maintained the land's natural contours and native plants. Another suburban development of this era featured wooded surroundings with meandering paths for residents. One-hundred years later, outside Kansas City, Missouri, Jesse Clyde Nichols built an upper middle class suburb with almost the same principles: no right angles, no wanton destruction of trees, and no disregard of the natural contours of the land (Jackson 1985).

These precepts resonate with the nation's mythos of being closer to, yet dominant over nature, and benefiting our national character by the association. However, a change had occurred over the century. The land around Nichol's homes was subject to strict regulations on landscaping, including extensive foundation plantings. If the home's appearance fell beneath neighborhood standards, the property could be professionally tidied and the bill sent to the underperforming homeowners (Jackson 1985). The aesthetic was not confined to luxury homes. Even the three "Levittowns," built by William Levitt after World War II, followed the 19<sup>th</sup> century ideals. Built on former agricultural land, each of the thousands of his affordable "cookie cutter" houses was landscaped with evergreens and fruit trees with no property-line fences allowed (Jackson 1985).

### *The Social Construction of U.S. Gardens*

From the earliest writings of Downing, Beecher and others, the visual esthetic of the front yard has been aimed to please, and even morally edify, the home's audience, rather than its occupants. With the advent of the railroads, one writer asserted that suburban residents had an obligation to beautify any portion of their property abutting a railroad line and to allow the passengers to glimpse. . . handsomely arranged lawns and flower beds" (Jenkins 1985:23-4). Accounts of 19<sup>th</sup> century pioneers crossing the prairies with slips (rooted cuttings from shrubs) and seeds are common and settlers grew ornamentals along with food crops (Wheeler 2011).

Transportation advances allowed them to augment their collections from commercial nurseries located in the East, California, Europe, and sometimes locally (Wheeler 2011). As settlers reproduced the garden styles encouraged in the East, these plants likely helped reproduce a sense of place and belonging in a new environment. With these multiple supports, it is understandable that front yard plantings are almost exclusively ornamental. The typical front yard is unfenced (Schroeder 1993), and generally features a lawn. At minimum, a basic collection of evergreen shrubs and shade trees, with perhaps an easy care flowering shrub surround the home.

Foundation plantings, named because they line the exterior walls of the house, obscure the utilitarian foundation and complement the home's aesthetic construction materials.

Plant science expanded in the 20<sup>th</sup> century, as botanists in U.S. land grant universities explored new varieties of familiar plants, such as roses, to find disease resistant cultivars suitable in an expanded number of climate zones. A number of authors have explored the expansion of the chemical industry into lawn production (Robbins 2007; Jackson 1985; Jenkins 1994), but these additions were helpful to the ornamental gardener as well, protecting exotic plants from diseases for which their native habitat had not created a defense. With the advance of gardening as a hobby, and as a marker of culture and status, plantings became more sophisticated. Inspired by what real estate professionals call "curb appeal" and supported by a growing industry of plant professionals, more extravagant landscapes emerged at the end of the 20<sup>th</sup> century. Elaborate gardenscapes signal homeowner aesthetics with massive boulders, berms, streams or ponds and, importantly, exotic plants and more of them.

Gardening has been called the most popular hobby in the U.S. In 2014, a study by the National Garden Association estimated 35 percent of households, or 42 million grow food at home or at a community garden. Defining a gardener as the one that does labor to maintain a

garden or landscape would include a member of virtually all U.S. households, but a portion of these are more dedicated. Stebbins (2001) analyzed leisure time activities into two categories, serious and casual. Casual leisure requires little preparation or skill and delivers immediate gratification, such as spending time with friends or television viewing. Serious leisure “is the steady pursuit of. . . an activity that captivates its participants with its complexity and many challenges. It is profound, long-lasting and invariably based on substantial skill, knowledge, or experience. . . . It also requires perseverance” (Stebbins 2001:54). Twentieth century gardening enthusiasts engage in serious leisure. Serious ornamental gardeners choose plants carefully for size, shape, color and multi-season beauty, relying on exotic ornamentals that have been bred to more flamboyant proportions than their species form. Flower size and color, leaf size and color have been manipulated by plant breeders, who also capitalize on spontaneous genetic variations. Gardeners pursue different styles, from flower to forest gardens, waterscapes to xeriscapes (dry), and are inspired by foreign places and foreign plants. They join local garden clubs, plant-focused societies, and organizations; visit public gardens and attend annual exhibitions held in cities and towns nationwide.

#### *Industry Supports/Natural Boundaries/Social Change*

The garden industry and its experts has supported and encouraged this hobby with advice given in magazines, books and television shows featuring trends in landscape design and horticulture, and featuring exotic plants. However, there are limitations to this design process. Garden plants are living entities with specific needs. Their specific and bounded care requirements set rules that the gardener must live by, just as the lawn, “sets the pace and character of subjected lives” (Robbins 2007:134). Landscape arrangements must contain plant specimens with similar cultivation needs for moisture, soil content, sun exposure, nutrients and

temperature tolerance. Plant producers have addressed these limitations by the development of and sale of new cultivars. According to Research and Markets (2015), a trade research publisher, the chemical industry's contribution included \$1.8 billion was spent on pesticides, and \$1.37 billion on fertilizer in 2014. Some portion of sales is due to lawn products, but sales of garden supplies are forecast to outpace them, because "many consumers find gardens easier to maintain with less water. Also consumers are increasingly growing their own fruits and vegetables in suburban and urban gardens" (Research and Markets).

The natural landscape and its climate must also be considered an agent in its transformation. Gardeners in harsh climates, including Colorado's intense sunlight and hot summers with erratic rainfall, must carefully monitor plant needs, including fertilizer, pesticide, and water, for most non-native garden plants could not survive without some additions. Added to the weather, the terrain adds another dimension to plant selection, including the land's slope and orientation to the sun. Soil composition, organic material content, its pH and permeability to water are factors that the ornamental gardener must consider and manage. This complexity presents problems to the many homeowners who don't wish to spend hours in the garden, or hire babysitters for their gardens when they travel. Countering this reluctance, lawn appearance, as well as the beauty of the ornamentals, is related to status (Robbins 2007; Jackson 1985; Jenkins 1994). A neglected landscape can compromise status, and because municipalities often have laws governing the height of grass, the disarray can inspire complaints to officials. Reactions to a poorly kept yard include surreptitious actions by neighbors, who have cut offending lawns themselves (Robbins 2007; Jenkins 1994).

In addition to the pressures of appearance and shrinking free time, the growing concern about synthetic chemicals and the complicated regimes they required, opened the way for a

professional lawn care industry starting in the 1970s (Jenkins 1994). More resistance to chemical applications came as the organic movement of the 1960s expanded out of the vegetable garden to include the rest of the landscape. Although organic lawn care products became available, long work hours, long commute distance, and the increased number of women working outside the home contributed to an increasing reliance on lawn and garden care professionals (Jenkins 1994; Robbins 2007). In 2014, the Bureau of Labor Statistics estimated employment in the landscaping service industry at over 568,000 people (BLS). Homes have become increasingly a private oasis and center of entertainment (Jackson 1985), with decks, pools, spas and barbeque pits. At the height of spending in 2005, U.S. homeowners spent \$2,946 billion on decks and porches, \$6,417 billion on patios and terraces, and \$8,891 billion on other alterations to their properties, excluding fencing and outbuildings (U.S. Census). Spending has fallen since then (Research Markets 2015), but gardening remains a required pastime, if not a passion.

Responding to the pressures of time, money and chemicals, a minority of gardeners moved to native plants. Protected by naturally developed disease-resistance rather than herbicides, local shrubs and trees became available as replacements for exotic ornamentals. Meadows of native grasses and forbs were advocated, and the image of a multicolored carpet was offered to replace the solid green lawn (Jackson 1985). Native plants are defined as those growing wild within a locale prior to European settlement. Some of these plants have been developed commercially, with cultivars available in different heights or bloom color. Examples include cone flower (*Echinacea*) and black-eyed Susan (*Rudbeckia*). However, gardeners who prefer native plant species often face fierce opposition from neighbors (Jenkins 1994). By ornamental standards, native plants can appear spindly and unattractive, much like the neglected landscape. This is slowly changing due to gardeners' continued anxiety about pesticides and the

even more slowly advancing knowledge about the danger some garden plants pose to wildlands, however, in 2016 a drive through most suburban developments reveals only a minority of homeowners with native landscapes.

Like the lawn, the choice of ornamentals is likely to be similarly shaped by expectations. As Robbins found, chemicals are used by homeowners with some anxiety. Despite their knowledge of the dangers, longstanding proprietorship of the viewer over the front yard allows neighborhood norms to overcome any resistance to chemical use. Yet, the demands of plants also require maintenance time, an increasingly limited resource. The twin demands of appearance and time constraints factor into the selection of plants that retail nurseries may label “easy care,” “vigorous grower” and “re-seeds itself.” The selection of plants from other continents with similar growing conditions and climates meet this description. These plants may have had increasing appeal for the worried homeowner (Robbins 2007) attempting to create an ideal landscape in the second half of the 20<sup>th</sup> century. For the most part, traditional ornamentals stay where they are planted, in the cultivated landscape where they get the sustained care necessary to survive. The introduction of exotic ornamentals that match local growing conditions added new plants with the potential to create environmental havoc in wildlands. Myrtle spurge is such a plant.

### *Noxious Weed*

Although non-native plants have embedded themselves among indigenous plants in unmanaged lands since the first explorers, this was not an issue for early European immigrants. Native Americans had names for some of these newcomers, such as “White Man’s Footstep” for plantain (*Plantago major*) (Young and Evans 1973) because it seemed to grow everywhere the white man went. It remains an invader of lawns, and a reason for some to reach for a broadleaf

herbicide. However, it was once used by both settlers and natives as an effective medicinal herb. Other plants are not as polite or useful, and as land managers began to see, a weed can be much more than a plant in the wrong place. Invasive plants are especially notable for their destructive takeovers: English ivy, kudzu, purple loosestrife, and Himalayan blackberry were intentionally planted, but escaped cultivated spaces to establish themselves in niches on U.S. soil, crowding out native plants and impacting native animals. Other plants carry diseases or harbor pests that impact agriculture or indigenous plants.

The coordinated effort by the U.S. to address noxious weeds arrived in 1974 with the passage of the Federal Noxious Weed Act. Under the authority of the Secretary of Agriculture, a list of noxious plants restricted from moving between states was designated, and federal land agencies like the National Park Service and Bureau of Land Management were given authority to control invasive plants. Updated in 1999, the current federal law requires states to establish noxious weed boards with state plant lists and management plans. In Colorado, noxious weeds are “alien plants” designated by local weed boards, because they have one or more of the following characteristics:

- Aggressively invades or is detrimental to economic crops or native plant communities;
- Is poisonous to livestock;
- Is a carrier of detrimental insects, diseases, or parasites;
- The direct or indirect effect of the presence of this plant is detrimental to the environmentally sound management of natural or agricultural ecosystems.

(Colorado Noxious Weed Act)

Plant declared noxious fit into three categories, which reflect their distribution, their impact and the management they require, something all Coloradans have responsibility to perform. Non-native plants found in large numbers statewide are placed on List “C” and do not require active management by the state, although “control is recommended” (CNWA). Plants found in discreet

locations may be subject to controls in certain parts of their distribution, including “eradication, containment, or suppression” (CNWA). List “B” plants must be prevented from spreading any further than locations where they are currently found. List “A” plants are rare, include never seen non-natives on a watch list, and are “subject to eradication wherever detected statewide in order to protect neighboring lands and the state as a whole” (CNWA). Myrtle spurge is in this last category, found along the Front Range and Western slope of Colorado.

### *Myrtle Spurge*

According to the International Plant Names Index, the first record of this plant was by Felix de (Silva) Avellar Brotero (1744-1828), a Portuguese botanist who may have encountered the plant while traveling in Italy. Myrtle spurge was included in one of his compendiums, but it is unclear whether as a newly categorized and named plant, or a newly discovered species. The *Euphorbia* family is named for Euphorbus, physician to a King of Mauritania who used latex from one of the spurges for medicinal purposes (Gledhill 2008). According to the U.S. National Plant Germplasm System website, the plant is native to Turkey, the Ukraine, Crimea and southeastern Europe, including Albania, Bulgaria, the former Yugoslavia, Greece and Italy. The plant was introduced to Coloradan gardeners as an easy-care ornamental around 1970, and had a reputation for erosion control as well as being a welcome early-spring bloomer. Accustomed to dry and rocky places in its original home, the plant is thriving in locations along Colorado’s Front Range.

The danger of introduced species to wildland ecosystems has been questioned by a minority of wildland biologists. Most studies have focused on the response of native species to invasive newcomers, demonstrating long and short term detrimental effects on multiple levels of the ecosystem (see Smith et al for an example). Noxious properties of myrtle spurge are well-

documented and have earned it a place on more than one state's noxious weed list. Its exceptional hardiness; a capacity to alter soil chemistry in its root zone to inhibit other plant species from growing; seeds that are projected up to 15 feet from the adult plant and viable for nine years insure its spread. When stems are broken they exude toxic latex that is poisonous when ingested and a skin irritant in susceptible people, especially children and the elderly. Skin exposed to latex is susceptible to blistering; in eyes blindness is possible. Not only humans, but companion animals are at risk. The plant's spread diminishes space for native plants and introduced pasture grasses, with the potential danger of poisoning livestock and wild ruminants if they graze it. Bees seem to love it, insuring seed fertility. Removing the plant where it has become established is a multi-year effort of annual removal of seedlings. It is resistant to most herbicides, requiring multiple applications to eliminate established colonies, especially those with large, older plants and soil seed stocks accumulated over years of established growth. As one garden blog put it, myrtle spurge is a "bully" (Harlequin DATE).

Despite fitting all four noxious criteria in Colorado, this exotic is a desirable ornamental in climates that don't support its invasive spread. The plant, also called creeping spurge and donkey tail spurge, has strong visual appeal to the ornamental gardener. It received the British Royal Horticultural Society's Award of Garden Merit in 1993, a prestige made more notable by British eminence in the garden world. More recently, it was named "Plant of the Week" in March 2013 by Davis Landscape, a London firm which promises its clients "design solutions that exceed their expectations." They note on the web page devoted to the plant that it is "considered an invasive weed in a number of locations throughout the world, including parts of the USA. The milky sap may cause eye and skin irritation in some individuals" (Davis Landscape). White Flower Farm, an online and catalog nursery, offers this glowing description in its online catalog:

This low-growing species offers a distinctive look for the edge of the border, the rock garden, or a retaining wall. Its thick, trailing stems, which spread outward like the spokes of a wheel, bear short, succulent gray-blue leaves arranged in a tight spiral around the stem. The foliage is evergreen, and in early spring the tips of the stems rise up and produce large clusters of luminous, sulphur yellow blooms. There's nothing else quite like *E. myrsinites*, which means this remarkable plant deserves a location of some prominence. (White Flower Farm 2013).

### *Botanical Xenophobia*

This is not the first time the tide has turned against non-native plants. Coincident with the fervor for exotic plants in 17th century Europe, a counter movement advised against adopting non-natives. The trade and exploration that brought new spices, food, medicinal and ornamental plants to Europeans was resisted by some for economic reasons, but by some physicians for their unsuitability to the European body (Cooper 2003). These arguments centered on the value of domestic alternatives, and the interruption of natural order that the imported exotics presented. This led to a cataloging of native species and their uses and an urging by some to abandon the exotic and rely on the native species that had served previous generations and which were emblematic of self-sufficiency. In one Dutch publication (the *Introduction to Indigenous Medicine* 1644), the author (Jan van Beverwyck, physician) cited high price as confounding people about product value, and noting what we would call “shelf-time” as diminishing any value that had originally been inherent in the product, sometimes to the point of it being dangerous (Cooper 2003:53 and 55). Van Beverwyck also noted that the product was likely to be adulterated with other substances, and more beneficial at “enriching pharmacists, than for curing sick people.” (Cooper 2003:55) Both plants and people were subject to degeneration in foreign lands, according to van Beverwyck. While plants might cease to thrive, then “wither and eventually die” people would “degenerate in their morals, customs and general health when they travelled outside their native lands” (Cooper 2003:55). While on the one hand this articulates an

argument for the value of the native, and the relationship of person to place and custom, it may also be read as encouragement to suspect non-native people as well as plants.

Olwig argues that the discourse similarities between nativists opposing human immigration and the scientists analyzing and alarmed by non-native plant and animal species originate in the artificial yet compelling depiction of national boundaries that appeared in Renaissance maps. His analysis assumes that within this bounded cartography. . .

[s]omething deemed to be native to the space of this landscape is authentic and desirable, whereas that which is alien is inauthentic and undesirable. If this space is simply a biological habitat, the discourse is (ostensibly) that of abstract objective science. But when the map is co-equal with the territory of a nation state, the discourse can become loaded with the symbolism of nationalism, xenophobia and racism.” (Olwig 2003:63)

In her 2001 essay in *Meridians: feminism, race, transnationalism*, Banu Subramaniam enumerates parallels between discourse describing foreign plants and foreign peoples. She points out that although loss of habitat to human development is widely agreed to be the most significant driver in the extinction of species, it is bypassed in this discourse (2001). Crosby was the first to note the rise of the exotic in wildlands, and to attribute higher rates of native plant extinction to their introduction (Rasmussen 1973), but he also included human impacts. Noted biologist E.O. Wilson called alien species “the stealth destroyers of the American environment” (Subramaniam 2001:29), but acknowledges human expansion and lack of action is the culprit in the loss of species at a rate “upward of a 1,000 times the rate that existed before the coming of humans” (Wilson 2016).

#### *Expert and lay perspectives*

Studies on the practice of science have shown it to be deeply cultural (Collins and Evans 2007, Bashar 1973; Healy 2005, Latour 1999) and thus the question of plant legitimacy on the landscape and in the nation may deserve examination (Subramaniam 2001; Sagoff 2005).

Contrary voices include Subramaniam (2001), a zoologist, who notes that biodiversity, a haloed concept in conservation biology, may itself be an unstable state, with constant changes allowing non-native plants to gain space. In the symbolic interaction tradition, Fine (1997) has shown the way nature's meaning is incorporated into cultural concepts, a process he called "naturework." Rather than being a defined and separate place, and the opposite of human occupied land, Fine argues this division is culturally defined. Environmental historian William Cronon (1995) argued this perspective. The definition of wilderness as separate, pristine and untouched by humans has decreased legitimacy among scientists who recognize anthropogenic influence in remote areas. The unofficial declaration that the Holocene geological epoch has been replaced by the "Anthropocene" is another indication (Rockstrom et al. 2009).

Healy (2005), Fine (1997), Bashar (1973) and others have shown that the privilege accorded to science, and scientific fact may be limiting knowledge and meaningful action for proenvironmental behavior, rather than this knowledge enhancing positive action for environmental repair.

Most particularly this occurs through an emphasis on technological or economic 'fixes', framed by 'matters of fact', that downplay the complex sociomaterial practices and contexts constituting these interdependencies. So, this culturally sanctioned insistence on privileging decontextualized 'facts' not only sustains complex environmental problems but also the technocratic perspectives giving rise to them and, further, acts to remove science and technology from effective critical scrutiny. Healy 2005:240

The division between humans and non-human life and material realms was developed during Greek thought and was enhanced by the spread of Christianity (Healy 2005, White 1967) and has been documented in sociological research (among others Catton and Dunlap####, Bright and Porter 2001) Research has demonstrated that positive environmental action is a learned behavior (Palmberg and Karu 2000), but translating knowledge into action is a complex process

(Heberlein 2012; Palmberg and Karu 2000). Even in children, attitudes and actions may be characterized by an attitude/behavior split (Palmberg and Karu 2000). Time spent in nature by children, often recommended as a remedy for our environmental disconnect (Louv 2005), has been shown to be influenced by the attitudes of influential mentors (Bright and Porter 2001). Those engaged in extractive activities, whether recreational or commercial, will pass those permissions on to the youth they mentor, thus reproducing attitudes in subsequent generations. Even non-extractive recreational activities like hiking, camping and eco-tourism can negatively influence wildlife behavior with potentially damaging outcomes, according to a current review of human-wildlife interaction studies (Geffroy et al 2015).

The official identity of Myrtle spurge in Colorado is not clouded by questions of legitimacy. The largely anthropocentric definitions in the state's noxious weed act make its listing as an illegal unambiguous. The optimism embedded in this designation is that it signifies a limited dispersal in the state, hence the possibility of eradicating the plant. A recent, multipronged removal effort in four municipalities along Colorado's Front Range united private non-profit voluntary agencies, state and local governments, and private landowners in season-long removal campaigns. Participating in this effort over three years, I observed the conflicted identity of myrtle spurge, the discourse on invasive plants in wildlands and gardens, and differing understandings of ecosystem health and environmentally beneficial behavior between experts and the public.

## CHAPTER THREE

### METHODS

Qualitative fieldwork “demands that researchers participate in the social worlds they seek to understand” (Lofland, Snow et al. 2006:13) and collect data through “sustained and direct face-to-face interaction with the participants” (p. 15). Consequently, I elected to observe people’s interactions in nature through participation in “Purge the Spurge,” the effort to remove this state-listed, noxious weed from the Front Range, including private property. These efforts were sponsored by a non-profit organization I call, “Mending the Commons,” which has worked for over a decade to restore public lands damaged by human use. Mending the Commons has a professional staff, but the restoration is accomplished largely through the work of volunteers. It seemed to me that people who were willing to spend time and effort and possibly incur injury in the process of removing unwanted plants could reveal definitions of and commitment to nature that add to the understanding of proenvironmental behavior. Discourse, as it continually instructs participants in meaning has influence on environmental policy (Feindt and Oels 2005). Indeed, through participant observation in spurge pulls and related events, along with content analysis of online materials related to the spurge issue, I gained insight into the way expert and lay knowledge is used to construct the meaning of nature and wilderness, and deliver a sense of what *belongs* in the natural environment. One aspect of this belonging is the plant’s status as a native. The non-native status of myrtle spurge is an argument for its removal, and I used this opportunity to compare the discourse frame used for non-native plants and human immigrants.

Gaining entree was not difficult. I had been loosely associated with the group Mending the Commons since 2011, when I volunteered as a leader for native seed collection activities in the county. I anticipated resistance to my research by participating agencies because of its

potential to be critical of agency practices. Thus, I began this study on a covert basis, but during fieldwork it became clear that I needed to reveal my role of researcher to staff, because I wanted to spend more time observing activities sponsored by the municipalities. In contrast to my expectations, my status was warmly received and agency cooperation smoothed my continued participation. My ease of access to these events may have been due to my earlier participation in trainings conducted by agency staff and county naturalists.

After participating in a spurge removal event in the spring of 2013, I volunteered the subsequent winter for a sustained and coordinated effort to remove the plant. My first task was to recruit homeowners from the targeted neighborhood who, for a variety of reasons, needed additional help to remove spurge. The rural homes had large properties, often in secluded settings. These locations were selected by project organizers because spurge plants were densely established and their location posed risks of spreading seeds that remain viable for up to nine years to lower elevations or to valued open space. These homeowners had received information by mail on the plant's status as a List A noxious weed in Colorado and notifying them of their obligation to remove the plant from their property. In one neighborhood, the homeowners' association sanctioned the project and encouraged residents to participate through its newsletter and general meetings.

Spurge removal involves spending long hours outside, sometimes on steep slopes, and often in the sun. Volunteers must wear long sleeves and pants, and rubber gloves that extend to the elbows. I had glasses to protect my eyes, but others wore goggles. We carried shovels to dig out deep roots—a difficult task when the soil was damp and an almost impossible one when the soil was dry. This demands a healthy physical condition and holds the inherent risk of injury. In addition, weather in the Rocky Mountains can be variable and spontaneous. On one occasion

clouds gathered rapidly when we pulled spurge at the top of a ravine in North Boulder; although we saw lightning and heard thunder, we continued working.

The volunteers I observed constitute a “loose collectivity. . . a collection of people in touch with one another but not as closely linked as those in an organization. . . or the residents of a neighborhood” (Weiss 1994:19). The characteristics of a “loose collectivity” can make it challenging to establish relationships where information is gained through repeated contact. Because volunteers do not maintain a consistent schedule but participate at different times, I anticipated some difficulty in observing any individual’s repeated participation in events. Finding and maintaining relationships in study sites is an acknowledged challenge in ethnography (Emerson, Fretz and Shaw 1995; Lofland et al. 2006). Nevertheless, during initial observations, I began to perceive a small group of “regulars” and, due to my own regular participation; I began to establish a rapport that fostered conversation. During the research, I also attended meetings assessing the project and planning future events. In addition, I attended five “plant exchange” events over a two-year period, observing people exchanging bags of spurge for native plants. This is in keeping with the ethnographer’s goal of participating in the daily routines of the setting, develop[ing] ongoing relations with the people in it, and observ[ing] all the while what is going on” (Emerson et al. 1995:1).

The land management and voluntary agency professionals knew my identity as a researcher. When participating in removal events—“spurge pulls”—volunteers assigned to the same group or area routinely shared information. At those times, I identified myself as a graduate student studying proenvironmental behavior. I gave the same response to anyone who asked me about myself, or about my connection to the spurge project. I recorded conversations and observations during these events in field notes written after the event ended. In addition, I took

brief notes during a few events, including planning meetings and the plant exchanges. Notes from plant exchanges and 2014 spurge pulls were analyzed for differences in lay and expert knowledge, and parallels between plant and human nativist discourse. For this I turned to feminist zoologist Banu Subramaniam's 2001 analysis, the foundation of her current work examining xenophobic responses to invasive plant species.

### *Content Analysis*

I gained an additional perspective on the plant in question through content analysis of internet postings on Myrtle spurge on garden sites and listservs. I chose a popular garden website with minimal requirements for joining the conversation. Because the listserv commentary was open, I collected information without the knowledge of participants. It is common practice to use conversation analysis techniques in listserv studies (Miller and Shepherd, Harrison). While some research on internet communication has focused on structure and content management, I used an interpretive technique, to understand the "perspectives through which people make sense of and give meaning to their experience" (Drew 2006:66). The people who post in the listserv are interpreting information based on their *perceptions* of facts, rather than facts independent of meaning (Drew 2006, Miller and Anderson 2004). This perspective is particularly appropriate because the majority of discussion participants are amateur gardeners, rather than expert botanists. To see how people delivered information that contradicted the plant's suitability in the garden, I coded this information as positioning the plant as desirable or not for the home garden, using warnings, advice and stated opinions. I also looked for nativist language.

I also reviewed online articles discussing the plant's merits and drawbacks. I chose a purposive sample using articles located in a Google search that included references from magazines and plant catalogs. These reveal the positive attributes of the plant for ornamental

gardeners. Although the plant is illegal to grow or propagate in Colorado, locations with less favorable growing conditions do not have problems with its invasive nature, although its potential for toxicity remains an issue. In this sample I included state publications describing Myrtle spurge, and several garden blogs. One blog was chosen because it was written by an owner of a local native plant nursery; a second blog was published online by a landscaping firm in England, where the plant is not invasive. These written publications were analyzed thematically using landscape norms and by comparison with nativist discourse findings using Subramaniam's (2001) parallels between non-native people and plants.

This analysis uses the U.S. Department of Agriculture's definitions of native, non-native, invasive, noxious (Appendix #). The USDA has a federal level list of plants prohibited from being move across state boundaries, but noxious weed lists are determined by each state and its designated local districts. This may mean a plant is welcome in home landscaping in one region, but not in another. This is due to its capacity to escape into minimally managed landscapes (open space) a factor often determined by the area's suitability to its specific growing conditions. A plant's native status is determined by its presence prior to European settlement, but this is place specific, and in Colorado as in other states, native status is determined its "indigenous" status within state boundaries. The state's Noxious Weed Act defines a weed as "any undesirable plant," so native buffalo grass appearing in a Colorado vegetable garden is as likely to be a weed to remove as the alien dandelion.

### *Nativist Discourse*

In her 2001 essay in *Meridians: feminism, race, transnationalism*, Subramaniam enumerates the parallels between discourse describing foreign plants and foreign peoples. These include:

1. Aliens, whether people or plants, are the “other.”
2. These aliens are “everywhere,” quoting Cheater (1992) “invasive aliens afflict almost every habitat in the country” (29) including suburban landscapes.
3. The inference that these foreign “evil beauties” are “silently growing in strength and number” (29).
4. “[A]liens are difficult to destroy and will persist because they can withstand extreme situations.” (p 29).
5. Descriptions of hyper-fertility and uncontrollable reproduction by human and plants. Seeds, their persistence, their roots.
6. Once established in a community, they become permanent residents. Economic costs are used to describe the impacts of both.
7. Contamination of native population through reproduction: hybrid plants. Native females pollinated by “foreign/exotic males.” p 31
8. Their illegitimate status: that is, they arrive illegally, stealthily.
9. Means of control of illegals are militaristic. The National Invasive Species Management Plan calls for a coordinated effort to protect the homeland. To stop them at the border we have armed guards for humans, inspectors and pesticides for plants.
10. Changes to immigration laws are called for. The botanical suggestion is that no foreign plant should be allowed in unless it is “proven” to be safe.

Subramaniam (2001:20-31)

To present the information visually, publications representing 1) expert, 2) lay (gardener) knowledge and 3) recruitment literature were combined to create word clouds. Word clouds analyze text and represent higher frequency word use with increased font size. For clarity, I edited the lists to remove words that did not address Myrtle spurge in the landscape, the purpose of the word cloud. The compiled texts and edited word lists are included in Appendix X.

## CHAPTER FOUR

## DATA

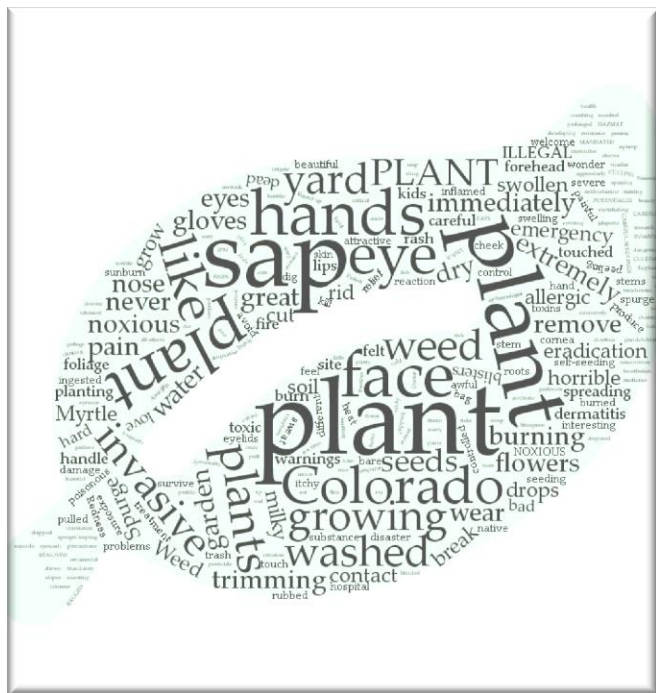


Figure 1: Dave's Garden Guide: Myrtle Spurge Discussion Thread emphasizes plant parts and injured body parts.

The publications chosen for use in the illustrations are representative of other text and informational material of the respective groups and present an immediate clue to their interests and perspectives. Contributors to Dave's garden guide (Figure 1) use more unique words in their descriptions of the plant, whether writing about injuries received or the utility of the plant in the garden. The tone is familiar, and most posts tell personal stories. Writers tell of blisters,

rash, wounds, swellings describe skin reactions, usually accompanied by description of their location, most commonly on the face (nose, eyes, lips, sinuses, tongue and cheek were all mentioned). Injury is a repeated theme in the postings, whether or not the gardener had been personally injured. Those with reactions to the plant generally follow with a warning to other gardeners. They also diminish their personal responsibility for injury by using disclaimers about using protection (gloves and long sleeves) and washing carefully after gardening. Alternatively, stories tell of trimming the plant carelessly and having no reaction. These people are "lucky," or "immune."

... I frequently have to untangle its branches. I never knew that this was harmful to skin because I never suffered any ill-effects. If the wind did break or damage a stem, I just cut it back. I love

the colour (sic) and the unusualness of this plant and was sorry to learn it was such a 'weed' elsewhere.

(British Columbia, Canada)

Reactions to the sap may not be predictive of whether a gardener will choose to remove the plant. Those who choose to keep the plant in the garden after reactions base the choice on landscape and garden norms of beauty and variety. In Figure 1, the words interesting, beautiful, attractive, and different appear in larger font. Flowers, foliage, color and spreading growth habit are also positively mentioned, as this gardener describes: “I do love the look of this plant. it (sic) can easily be dead headed, though, i have never done it. I welcome its odd foliage in my gardens. If its legal in your state, ive got some to trade” (Dave’s). They normalize the risks presented by the plant by planning to be extra careful, and growing it in areas without public access. One gardener described suffering intense burning from exposure to the latex, two trips to the hospital and corneal damage but concludes, “No wonder the deer don't eat it. I don't know if I'll get rid of this plant, but I'll definately (sic) wear a HAZ MAT suit when trimming it!” (Dave’s). Several other gardeners were less sanguine about the plant after experiencing skin reactions, calling it “a toxic beauty” and “treacherous,” indicating a sense of betrayal. One gardener admitted she loved it at first, but after its invasive spread and skin rashes wrote, “First plant I really hate, and I grow a lot of things people generally don't like....!” (Dave’s Garden Guide).

Of the 32 who posted in the thread, six were Coloradans who warned of the illegal status of the plant, with warnings about fines and the danger to others. “According to the Adams County Parks Department, Myrtle Spurge is growing aggressively across Colorado. However, it is ILLEGAL to have it, so if it is in your yard, you are REQUIRED BY LAW to remove it” (Dave’s 2007). Although some gardeners refer to the spread in their own landscapes, accounts of invasive spread into open space comes most often as secondary information, and, as the above



ecosystems, out competing native vegetation and reducing wildlife forage.” The description of seeds projecting up to 15 feet from the mother plant can be compared to the nativist discourse of hyperfertility that Subramaniam describes. These seeds are so powerful, previously populated sites require monitoring for nine years, and “treatments” whenever new plants appear. Successful treatments prevent plants from “eject[ing]” seeds where they might stick “to wildlife hair. . . enabling transport far from the parent plants” (WSWB) to create another “infestation” (CO). The correct way of dealing with this invasion is described in military terms: “Survey your land regularly to detect new invaders and eradicate any new populations quickly.” Readers are warned that if the removal effort severs too little of the taproot, what is left may produce plants. This describes the super-hardy alien, able to tolerate the worst conditions and survive. According to a Washington State Weed Board press release (Kusske 2012), “[T]his hardy plant is tolerant of very cold winter temperatures, summer heat and little irrigation,” evidence of its ability to withstand extreme situations. Repeated applications of herbicide are necessary. Colorado Weed Management Association warns of its “potential to do enormous environmental damage” (CWMA).

All state material describes the milky white sap that carries the skin irritant, but the Washington message is very specific in the way it creates the plant’s noxious identity:

Myrtle spurge is toxic. The active ingredient in Spurges are terpen esters. One such terpen ester is resiniferatoxin, which is 10,000 to 100,000 times more irritating than capsaicin, the substance that makes chili peppers taste hot. Some terpen esters are also known to be carcinogenic.

Myrtle spurge sap can cause nausea, vomiting and diarrhea if ingested. Skin contact may include severe blistering and burns, rashes, severe skin irritation and dermatitis. Myrtle spurge has been known to cause anaphylactic shock reactions in sensitive individuals. The sap can cause large painful eruptions on the surface of eyeballs and can result in blindness. All parts of the plant are toxic. The most common victims of myrtle spurge toxicity are children. (Kusske 2012)



volunteers at a spurge removal event MTC organized. A mix of plant descriptions, warnings and incentives is characteristic of the campaign material. The illegal designation placed on the plant is used more to emphasize the noxious nature of the plant, rather than explicitly ordering its removal. The casual, friendly tone is especially apparent in the material sent to members and volunteers. Information is embedded in the chronicle of Colorado's experience with Myrtle spurge, emphasizing the valiant effort county agencies have given to eradicating this noxious weed. Of course, more must be done because "private" land is off limits to these efforts. Regular citizens must band together to help protect native species. "Agencies have launched an education outreach program for residents called *Purge Your Spurge*. Volunteers and staff are canvassing local neighborhoods to encourage residents to remove it. . . or utilize volunteer help for removal."

People figure prominently in this rhetoric; residents, volunteers, neighbors, county crews and citizens appear in the word cloud. New elements include the incentive of pleasure in the activity (fun, food and drink); the potential for accomplishment (reduce, protect, opportunity, help, improve), for others (public lands, wildlife). Perhaps unsurprising in volunteer recruitment material, these positive aspects come with risks volunteers must face (poisonous, danger, harm, blistering, and irritations). It is positioned as a necessary risk, due to the need to manually pull the spurge rather than poison it, and the effort is portrayed as a contest where volunteers must "hunt" for an "aggressive invasive exotic species" that has "jumped the fence," to invade open space where it "threatens our native ecosystems" (MTC instructions). That volunteers will be working on private lands, rather than the commons might be "improve[ing] the health" of private land, but "in the process help protect the greater watershed from invasion of (sic) this destructive weed" (MTC Instructions). Emphasis has shifted from risk for the individual exposed to the

plant, to the benefit for something the individual values, in this case ecosystem health. This is not unlike military recruitment, in that it places personal risk at a counterpoint to personal benefit gained by facing danger in loyalty to a valued commitment (the nation). This similarity is not only covert; the recruitment material for 2016 included a photo mimicking the “Uncle Sam” recruitment posters of WWII. Across a photo of very determined looking woman pointing at the camera are the words “WE WANT YOU!!! TO WEED! Purge the Spurge 2016; Join the Movement.” Text in the accompanying email announces that Myrtle spurge “will eventually take



Figure 4: Bags of pulled Myrtle spurge collected in one municipality were prominently displayed. Participants received three potted native plants regardless of the amount of plant removed. Photo: Althea Godfrey

significant damage to our native ecosystems. . . and must be destroyed” (MTC 2016

recruitment). This is considerably more militaristic than recruitment material from 2014 and incorporates the xenophobic theme of threats to the homeland by fence-jumping aliens. Although this material mentions the harms to people, the emphasis is on ecosystem harms.

over an entire property and spread to neighbors and open spaces if not treated” introducing commonly understood neighborhood landscape norms. The weed “must be exterminated wherever it has been detected,” because without predators it will “crowd out the diverse native plants that make up our local flora causing

### *Native Plant Exchange*

The Purge the Spurge campaign included plant exchanges, where landowners who removed their spurge could exchange removed plants for free native plants. I attended this event in three different municipalities and observed wide differences in participation levels. The event with the highest number of participants had the longest history of spurge removal campaigns. The community is highly educated and noted for environmental awareness. Older homes near the town center are generally on small lots with well landscaped front yards. Newer homes are a mix of styles and lot sizes, and in my judgement follow national landscape trends with ornamental plantings in front yards. According to a local land manager, the plant had been in popular use in town and in the homes in the foothills above the town since the 1970s. The two years I observed the plant exchange events featured an almost constant stream of people with full bags of spurge, some with carloads. In 2015,

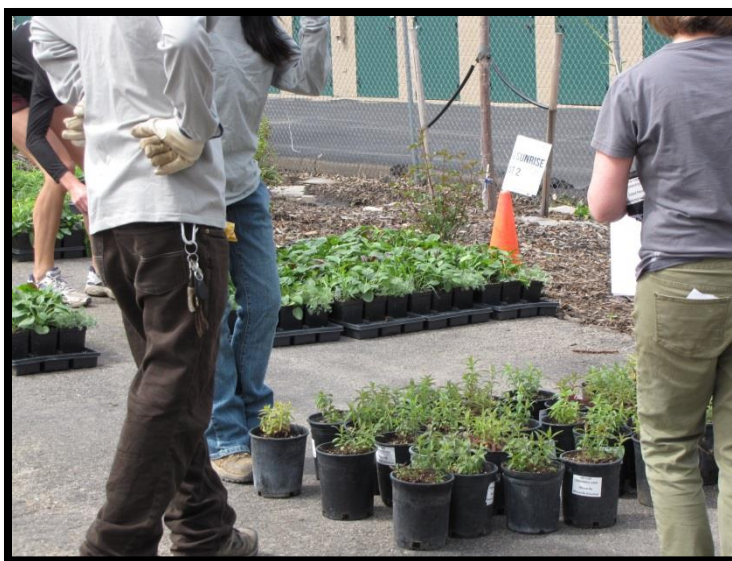


Figure 5: Searching for replacement plants.  
*Photo credit: Althea Godfrey*

the event staff included a traffic control officer. Plants in gallon-sized pots were arranged in groups identified by a poster with a color photo of the plant in bloom over care instructions. The native plants offered included upright flowering perennials and groundcovers. Participants received two gallon-sized plants and they often took a long time choosing, perhaps because in most cases the plants that had been removed would have covered a much greater area. The plant exchange advertising did not mention this plant limit, and people in all locations were sometimes

disappointed. I was told that the first year, a gardener used subterfuge to get additional plants. He went and changed clothing, returned, got a bag of spurge from the loader and brought it to the team, I was told. “Isn’t that amazing what he did for like, \$15 worth of plants?” said the organizer. The estimate for attendance was approximately 150 people, with at least 2.25 tons of spurge collected both years.

This level of participation was not replicated in the other two towns, although numbers don’t always predict the amount of spurge collected. For example, in the second town, a participant arrived at their first-year exchange in a small pickup truck dwarfed by its full load: 44 black plastic leaf-bags of spurge. This unexpected delivery got attention from all agency participants. The driver, a woman around 40 years old, said “It’s so good to be with people who appreciate what I did.” She resided about 15 miles away from this exchange site, and had pulled these plants all herself “because my teenager wouldn’t help me.” In extraordinary cases like this, staff acts to increase the payoff for participants. In this case, two bags of mixed native grass seed was offered and accepted. This same property owner was planning to pull spurge from her neighbor’s property, because injury prevented him from doing the work. She was concerned about the plant’s spread. Others demonstrated this level of commitment. At this same town’s exchange the following year a couple with two children delivered spurge pulled from their children’s school property. Talking with natural resource manager, JF, they were proud to have removed all of it, and let him know their participation didn’t end there.

“Sometimes we sneak into our old neighborhood and take it when nobody’s home,” said the woman.

“What if somebody calls the police?” asked JF.

The man responded, “Oh, we were ready for that.”

She continued, “We keep educating people. It’s poisonous. I thought I got some on my hands.” She grimaced and hunched her shoulders.

“Keep up the education,” said JF.

“Yes, we will. Or maybe do some stealth pulling,” she said, smiling.

This level of commitment indicates allegiance to eradication over the pressure to follow cultural private property norms, and despite risks of injury. This parallels behavior seen in studies of lawn culture where a neighbor’s messy lawn was cut or weeded in the night. A possible explanation is the viewer’s ownership of the front yard. In the case of spurge it is not appearance, but toxicity and legality which provide entree. Perhaps the danger allows committed participants to expand their definition of neighborhood.

The plants offered by the second municipality were smaller, a two-inch pot, but more individual plants were allotted. Early in the day participants were asked which species of plant they would prefer and received a bag of three. Later in the day, when it was clear there would be left over plants, a bag with six plants, one of species on hand, were handed out. Explicit care instructions were given, which includes regular watering for the first year. Attendees were also encouraged to take information on Colorado weeds, which ranged from single sheets of paper to glossy spiral notebooks with full color photos. One outcome of the lower attendance was increased personal interaction. Questions about other problem plants were answered and stories were told.

A cheerful woman who had brought in four five-gallon buckets of spurge confessed to me in a stage whisper, “I loved it.” She told me how she had encouraged its growth in multiple locations by transplanting spurge into the new location. “Now I have them everywhere.” She rolled her eyes and said. “I sprayed. . . But they are coming back. Right up from the middle.” The resistance to pesticide use appeared in more than one location, but spraying was encouraged by the county for large infestations. The county’s weed manager told her, “It’s OK to spray. Sometimes you have to spray. Farmers have to spray or they’d be out of business. I grew up on a

farm, so that's where I'm coming from. It's OK." However the last participant of the day would not have agreed. She was able to motivate 16 others to help her remove a large area of plants after her neighbor had threatened to spray the spurge with pesticide. It took them all week and the result was a full size pick-up mounded with black plastic bags. Another participant had pulled and hauled in his neighbor's spurge because the man was "too suspicious" of the government to do this himself.

The third location for myrtle spurge exchange had very few visitors, despite the fact that the town's weed manager (CJ) had notified nine home owners to remove their spurge. The only person to come during my two hour observation had received one of these notices, and this appeared to be the only reason for her participation. Beauty and ease of care were her priorities.

"They were pretty and easy," she said. "I let them go (spread). I came because I got the citation, I mean the notice."

"Yes, but they are so toxic. They have that sap. You can get a rash," said CJ

"I know the rash," She nods her head as if she is tired.

For this participant, the ease of care outweighed any potential danger. Her motivation to pull the spurge in her yard was linked to the plant's illegal status and to her own compromised status.

Most of those who came to the native plant exchanges were coming voluntarily.

Those who come forward after a legal notice may be responding to rationalized authority (Ritzer 2003). To those who have a cognitive interpretation of beauty, spurge removal would likely appear as a reasonable request by government. However, according to land managers, the use of legal authority to eliminate spurge on private property has had only limited success. This is despite strongly worded letters sent to property owners by county officials. As I was told by one county official, "What we do now is pretty legalistic. They get a letter that sounds like they are going to have a lien on their house. We want to move to a much softer approach."

### *Volunteer Spurge “Pulls”*

The best way to eradicate spurge is to attack it first at the periphery, a county official said. “You can remove the center but it squeezes out in all directions.” Getting the spurge growing on private property was the primary reason for the participation of Mending the Commons. Eradication on public land is done by land agencies and the US Forest Service, and thus costs are borne by taxpayers, although volunteer participation helps reduce this amount. But as is evident, for eradication on public land to be successful the plant must be removed from private property as well. The cost of this can be problematic, as the process may take as many as nine years, the length of time seeds are viable. To jumpstart the eradication effort in 2014, county officials worked with MTC, a non-profit agency which helps restore degraded sites on public land and open space. Volunteers were recruited by MTC to help reduce property owner’s initial cost on some of the worst sites in the county, as assessed by county land managers. These locations were chosen after surveying the extent of the plant’s growth on properties where owners responded to a recruitment letter. According to MTC, these homeowners “gratefully accepted this opportunity to improve the health of their land and in the process help protect the greater watershed from invasion of this destructive plant” (MTC instructions). Given the potential dangers of exposure to the plant’s sap, those who joined this campaign have a different conception of Myrtle spurge than the ornamental gardeners who cling to it.

Myrtle spurge is not the only plant that has been targeted for eradication by this group. They have engaged in years of removal efforts to eliminate Mediterranean sage, another garden plant that “escaped.” The group also works to restore sites degraded by use, or disasters like fire or flood. The organization rewards its volunteers with food, including attention to dietary

restrictions. Camaraderie is another draw, and many volunteers recognize each other from prior events, making the initial minutes of volunteer gatherings noisy with conversation.

Volunteers' dedication to detail is indication of their commitment to environmental



Figure 6: Steep hillsides do not dissuade volunteers' removal efforts. Photo credit: Althea Godfrey

rescue. At one location, it was evident that a superficial effort in the past had removed plant tops, but left the large roots almost untouched. True to the warning in state plant publications, these roots had resprouted. My group had reached this spot just before lunch was called, but volunteers kept working. Once started, it is compelling to maximize the number of plants pulled. In contrast to the superficial effort I just described, volunteers dig the soil around the plant in order to get at

least four inches of the root. Volunteers mutter when a plant comes up with less than this, and are visibly

frustrated and agitated until more of the root is removed. Thorough removal on each site means repeated scans of the property until everyone is satisfied. Some volunteers work in natural resources, and a few are interns learning skills and hoping to make contacts for a future job search. But lay volunteers display the same level of commitment. At another group pull we were working a large area of spurge that blanketed a steep, rocky hillside. The soil was dry and taproot removal was very difficult. Increasing the challenge, the spurge had been superficially removed, making the top of the plant useless to pull. Yet all the volunteers at this site displayed committed effort, and every large plant removed with a long taproot was displayed to cheers from the group.

I have also seen volunteers pulling spurge on private property's steep slope where the owner had refused to go because she didn't feel that she had to "risk her life" to remove the plant.

## CHAPTER FIVE

### DISCUSSION

Home landscape norms have had centuries to develop, and continued advertising by industry and retail outlets maintain these expectations. A managed appearance is necessary, most often achieved by an expanse of lawn grass punctuated with ornamental plants and trees. When time, money and capitalist efficiency are applied to these expectations, hardy ornamentals like myrtle spurge have a logical appeal. Their functionality for the busy homeowner may outweigh any risks, even after serious reactions. The plant's ease of propagation and care was an element in its initial success as an ornamental and continues to hold appeal for more rural property owners trying to maintain larger areas and still meet landscape norms. However it is clear that complete simplicity of care was a chimera, so those who keep the plant after having a reaction are motivated by another aspect. The performance of beauty, and the emotions that arise with its perception, may explain this. One gardener, a retired horticultural scientist, noted the Myrtle spurge's danger and beauty in his blog.

I've now had three stressful encounters with *Euphorbia* sap, two resulting in emergency room visits. These were classic anaphylactic shock reactions which – trust me – are no fun, but compared with getting the sap in my eye, they were a cakewalk.

And yet, despite the sap risks, I still grow a number of euphorbias, including *Euphorbia myrsinites* – I'm just much more cautious when I work around them! . . . [U]sing gloves. . . seems like a sensible precaution for all gardeners, even for those showing no indication of sensitivity.

So if you've got the courage and the right planting site, consider giving low-maintenance myrtle spurge a try.

In all of the cases I witnessed, natural resource managers advised gardeners to use native plants for replacement. Similar advice is given in the state plant publications. In sites where extensive removal had disturbed the ground, MTC volunteers spread native grass seed.

Replanting is necessary on steep sites, and may make it more likely that care of the site will extend into the future. However, once homeowners seek advice independently, whether in plant publications, from staff at garden centers or using online sources, non-native and translocated plants (native to the U.S., but not to the state) will be added to their choices. The elements of cost, easy care and beauty, combined with the plant's growing requirements and site conditions will have to be balanced by the homeowner. Helping homeowners achieve a landscape appearance that meets or exceeds norms without the use of invasive non-natives is not fully prioritized in the current effort, and may limit success.

Using landscape design's understanding of beauty, a cognitive-influenced appreciation is influenced by scientific knowledge. Concern for the native landscape would move adherents away from appreciation and acceptance of myrtle spurge. Non-cognitive appreciators would favor aesthetic experience, and the appeal of myrtle spurge would remain, based on garden and landscape norms that focus on visual stimulation without "interference" from outcomes. A third group uses a mixed measure for beauty, and landscaping is recognized as an influential informant as well as an aesthetic experience. In this view suburban gardens can provide education and inspiration to viewers as well as aesthetic satisfaction. Myrtle spurge would be eliminated by these gardeners from plantings, dissuading its use by other gardeners. Incorporating these aesthetic measuring sticks may add opportunities and new incentives to the effort to manage noxious plants.

Serious gardeners use non-native plants regularly, and most of these are hybridized specimens that require gardener care to survive. The argument a plant is non-native is not likely to have relevance to plant choice. The invasive character of a plant is more likely to cause a gardener concern, but most likely to motivate gardeners is the toxicity, danger to children, and in

Colorado the illegal status. These gardeners are aesthetically motivated, and reluctantly remove Myrtle spurge. The incentive of free native plants in exchange for spurge addresses the need for a “softer approach,” however my observation revealed the exchange did not satisfy a significant number of participants. Two or three native plants are not sufficient to replace the area of



Figure 7: Pulled spurge plants litter the driveway at one home.  
Photo credit: Althea Godfrey

landscaping surrendered by spurge removal. It’s possible that additional incentives, such as free gardening or landscaping seminars or free seeds that gardeners can grow out would be an incentive option that would satisfy more gardeners and motivate removal.

Gardeners use some xenophobic rhetoric to describe their disaffection with Myrtle spurge, especially for its invasive growth and its toxicity, often described as a betrayal. But the warnings given by these gardeners are only rarely associated with its non-native origin. Those that do mention this are often

passing on information gained from experts, or are experts themselves. The most xenophobic rhetoric is found in the state publications, where some bias for native plants may preexist in natural resource departments that compile and publish the information. Wildland experts likely experience landscapes dominated by native plants as more beautiful than those polluted by exotics. Acreage for native plants and wildlife is declining, and the remaining land is under increasing impacts by users, climate and pollution, another stress and possible motivation for encouraging natives.

Those who incorporate knowledge into aesthetic appreciation (cognitive theory) are more likely to appreciate the need to remove spurge from gardens in order to benefit natural landscapes. Eradication of myrtle spurge becomes worth the time given and the risk taken. These individuals would be more likely to participate in volunteer efforts to remove spurge from open space, and even from private land, despite personal risk. Mending the Commons volunteers express appreciation of the landscape this way, as indicated by their pride at removing plants with their long roots and their ongoing participation in the eradication effort. Disenchanted gardeners also fall into this category, evidenced by the spurge exchange participant who “cheered aloud” with every long root she extracted. Some serious gardeners also respond to knowledge, but as indicated by those who posted in Dave’s Garden Guide, the knowledge of toxicity and danger to children may be more influential than danger to wildlands.

Those who see gardening as an aspect of nature appreciation are also more likely to respond to knowledge. They are not necessarily informed about invasive plants in unmanaged areas, nor are they necessarily interested in helping to remove them. However, these gardeners are likely to be willing to avoid plants that could harm the environment, and would likely want to create gardens that respond to local needs, such as drought tolerant plantings that minimize water use. Their incentives would come from adding plants and seeds beneficial to local pollinators, or disappearing plants like milkweed, a native plant and the only source of food for the caterpillar stage of the Monarch butterfly. As potential advocates for more careful landscaping, they may be influential in shifting local landscaping norms. This aspect of gardener knowledge has been useful in post-disaster situations, where those working to restore places affected by natural and technical disasters have decreased trauma reactions as compared to non-participants (Tidball 2012).

I suggest that when humans, faced with urgent disaster or hazard situations, as individuals and as communities and populations, seek out doses of contact and engagement with nature to further their efforts to summon and demonstrate resilience in the face of a crisis, they exemplify an urgent biophilia. This urgent biophilia represents an important set of human-nature interactions. . .

Tidball 2012:16

While Tidball attributes this generalized response to biophilia, and specifically to an “urgent biophilia,” I would argue that a similar response—active caring for the environment—is an element of managing the stress of biodiversity loss for experts and for members of the public concerned about habitat destruction or climate change. For these viewers, knowledge of the native environment cannot be subtracted from perceptions of beauty: In order to preserve beauty, action is necessary. If this is so, the incentives MTC offers its volunteers are ancillary to their primary goal of maintaining beauty.

## CHAPTER SIX

### FUTURE RESEARCH

In recent time the perception of wilderness has shifted from frightening to inspiring. Studies have shown the hedonic value of a healthy environment, and the improvements in physical and mental health that access to nature provides. Currently, the knowledge that humans have become a threat to nature, rather than the reverse, is growing in the developed world. This has inspired some to act on nature's behalf. Reaching sustainable consumption levels requires wise consumer choices on an individual level, and most environmental advocates believe education has a primary role in shifting unsustainable consumer trends. Understanding how nature's beauty works in the 21<sup>st</sup> century may be an underexplored aspect of sustainability education.

Understanding the performance of beauty in managed and unmanaged (wildish) land is integral to understanding willingness to participate in environmentally sound decision-making. Currently, wildland restoration efforts must negotiate lay knowledge that obstructs invasive plant removal (van Wilgen 2012). In other cases, management of wildlands using controlled burns is resisted. Undeveloped land to be set aside is chosen for its drama, recreational utility or other anthropocentric evaluations rather than biological or ecological necessity. This is true for land use decisions at smaller scales, and it may also be true for consumer decision-making in other areas. Further research into the effects of ecological knowledge on appreciation of nature's beauty would help to reveal the extent of its influence.

The loss of enchantment has been hypothesized as a factor in increased consumption. While a sense of enchantment was formerly experienced in nature, the halo seems to have been transferred to consumer goods (Ritzer 2003). Sustainability studies often focus on technological efficiencies and consumer decision-making without addressing the satisfaction sought at this

level or the role that the experience of beauty may play in well-being. But environmentalists have long insisted that the experience of nature's beauty is essential. This research endeavor indicates that the sensations associated with the experience of beauty are an overlooked element in developing a connection to the environment. I expect further research would reveal an association between the sensations within the perceiver of beauty and their intimate connection to nature. Further, scientific information about ecosystem health appears to play an influential in the construction of beauty. As population grows and suburbia encroaches further into open spaces, native species will be challenged by the twin impacts of increased visitor use and exposure to non-native species. If as studies have shown, this causes the depletion or elimination of native plant species, conditions for other species are impacted, altering ecosystem equilibrium. Attention to the beauty of indigenous plant species is a discounted element in the discourse. As indicated by the response to the incentive of free native plants, successful perpetuation of native species may lie as much in emphasizing their beauty as in dramatizing the noxious character of their exotic competitors.

When addressing xenophobic rhetoric, a similar effort has made recognizable shifts in the perception of marginalized groups and foreign peoples. Although the message of diversity receives a mixed reception, it is clearly framed as a social good. Viewed in a historical context, the civil rights and diversity movements have brought recognition and increased legal rights for people of color and gay and lesbian communities. While incomplete, this educational effort continues to be a persuasive force for inclusivity, bringing "others" under the national umbrella. As the sophisticated techniques of genetic identification continue to expand the human story, new information may add details that offer even more opportunities for understanding differences, and ultimately, similarities.

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## APPENDIX

## RAW DATA

*Figure 1: Word cloud text**Dave's Garden Guide, Myrtle Spurge*

On May 28, 2015, [Gina2](#) from Aurora, CO wrote:

Colorado Class A Noxious Weed. Mandatory eradication.

All locations of this plant in Colorado should be immediately reported to the Colorado Department of Agriculture

DO NOT grow this plant in Colorado. It has sent children to the emergency room in our area, Aurora, CO

On Apr 9, 2014, [Lauribob](#) from Twisp, WA wrote:

I have this in my rock garden where it can get a bit thuggish if you let it. I haven't found it to be disturbingly invasive - it has spread around the immediate vicinity. I will use care in the future when I'm jerking out the extras, but I've never had a skin problem with this one and I'm highly allergic to poison ivy.

On Jun 20, 2013, [kooger](#) from Oostburg, WI (Zone 5b) wrote:

Last fall, I volunteered at the local woman's shelter and took home a little plant that was struggling. I told them I would overwinter it and would replant it if it looked like a keeper. It took off with a little care in my sidewalk bed and flopped over half the width of the sidewalk. I decided to trim it back about a month ago and broke off half the stems with my bare hands. No reaction. Reading all these reports makes me realize I was very fortunate. I'm not pulling the whole plant but will watch it carefully and likely move it to a less traveled area. I do have grands... and no, I'm not returning it to the shelter as there are often kids staying there.

On Dec 21, 2012, JoJo70 from Bethel Acres, OK wrote:

I use this plant extensively in my own sandy soil by a lake in central Oklahoma. I also planted it in a raised planter on the highway where we have a sign for the lake. We have to carry water to the planter and because of that it is ideal as it survives our dry hot heat. I have a large rock, some day lillies and the spurge in the top layer of the 4 by 8 planter. The bluegreen color reminds me of the color I wish our lake was but since this is Oklahoma, that's not happening. The center does seem to die back every year and I simply break off a few pieces on the edge and stick them in the ground where needed and they fill in the empty space in no time. I usually don't wear gloves and have never had any dermatitis from the plant. I am allergic to poison ivy so I do not have a

strong immune system to plant life. I will tell my grandchildren to be careful around it from now on since I read all the horrible results some people are having.

On Oct 23, 2012, lkbowman from Crystal Lake, IL wrote:

Please be WARNED!! The toxins are so real. I had this plant growing along the edge of my pond and trimmed it. My 30, 13+ year old fish were all dead this morning. It only took 12 hours to kill every one of them!! I had no idea this could happen. That plant has been growing there for years but of course this year it was just bigger. Please DO NOT USE THIS PLANT. So sad and heartbroken!!

On Jun 30, 2012, SnookieJ from Bend, OR (Zone 5b) wrote:

I have quite a bit of this growing in my flower beds. On the positive note, it does grow anywhere...I have a lot of terrible dry soil under a Juniper tree and its great there. The bad part is its horrific if you get the sap on you. I knew the risks and still trimmed it back yesterday, paying special attention to not getting sap on me. I came in the house afterwards, and washed up very very good, on my arms and hands. About 2 hours later, my face felt on fire. I neglected to recall I had touched my face while working outside and now I feel like I have a bad sunburn. Hurts to touch. Woke up this morning and my face is really swollen in areas. Learned my lesson the hard way. Not sure if I should get rid of it completely..because it was at my own hand that I let it get to me. So ....just a warning for you out there wanting one of these. Do not have if you have small kids. Its a toxic beauty.

On Jun 12, 2012, gabbydeb from West Jordan, UT wrote:

I am chiming in from West Jordan UT. We have this awful ground cover in our yard. The lady that lived here before us, planted it, because I am sure that is so pretty and nice to look at.

We really liked it too, until My Husband had to go to the emergency room one night, because his eye were so inflamed and burning, that the Doctor had to irrigate his eyes and put medicine in them.

I just got a small amount of sap on my eye and it was burning like crazy. This stuff does grow like a weed, and will take over.

Now we are faced with the task of getting this stuff out of our yard.

On Aug 16, 2011, Ontarian wrote:

Here in Southern Ontario, Canada, I've come to expect this plant to be somewhat invasive, seeding itself easily, but for years have tolerated a few plants for their looks. Yesterday I pinched back the stems with bare hands on one plant with no problems. Today I did the same on another plant and even tho I washed the sap off my hands with soap and water as plain water didn't budge the gummy stuff, I must have gotten some in my eye. My eye has been burning for a

couple hours now and my nose is running and also burning. I've rinsed my eye with cold water and used antihistamine drops with little relief. I hope I don't have to get further medical treatment. When this is over, the plants are all going to be pulled up and put in the garbage. This is no fun!

On Jun 2, 2011, Sabrina1978 from Gibsonburg, OH wrote:

When I first got this plant I loved it. I now know it's horrible. Spreads everywhere, gives me an itchy unsightly rash, and looks horrible after seeding. Don't do it. EVER. Hard to get rid of because it can be so prolific. Although seeds are heavy, the plant pops them in the air on breezy days and they go flying!!! First plant I really hate, and I grow a lot of things people generally don't like....!

On Mar 20, 2011, mudhazerustsalt from Salt Lake City, UT wrote:

This plant is awful. Do not be tantalized by it's ease of growth and interesting look.

First, the infestation. Here in Utah, it takes over entire slopes and kills other plants. Last year I pulled enough to fill 30 lawn bags, turning my steep backyard into a naked pile of dirt. Finally this spring I see just a few natives starting to reclaim the ground they lost. I don't know anyone here who has easily controlled this plant in their yard.

Second, the sap. Even in states where it's easier to control, I have heard of very few gardeners who enjoy the rash. I had to go home sick from work once because the sap got on my hands and then somehow my face while I was weeding. If it gets in your eye, the infection can be critical.

My department of ag gave me some control pointers. You can pull them (get at least 4" of root on mature plants) or use herbicide. Round-up worked very well for me. Either way, you have to vigilantly destroy new sprouts for a few years. The plant bursts its seeds each summer, spreading them as far as 14 feet around the parent.

On Aug 9, 2010, pirl from (Arlene) Southold, NY (Zone 7a) wrote:

Because of the many warnings about the sap I did wear gloves and had the trash bag at my side. I disposed of the cut back plant but some sap obviously must have fallen on other nearby plants I was trimming.

My eye is inflamed, my cheek is hot and it does extend to my ear and my lips. Clearly with the heat of the day and via sweating the tiny portion of sap has caused these problems.

I would avoid the plant completely.

On May 30, 2010, MachTurtle from Denver, CO wrote:

Absolutely **\*\*erradicate\*\*** this weed but think twice about doing it by hand. I'm going to use pesticide.

While trying to remove this noxious weed I must have gotten a small amount of sap on my forehead which sweat brought down to my eye. This is probably the 3rd most pain I have ever felt.

I had taken several precautions as I knew the plant's sap was quite venomous. Head covering, gloves, eyewear, etc.

I am glad I did not get more and prolonged exposure as my eyelid is on fire and to a lesser amount my outer eye. After an eyewash and drops the pain is really only minimally better. My cornea seems fine. I am not really swelling although my nose did begin to run a bit.

I will have to head into ER if this is going to persist.

We have a lot of this. IAs I understand from the neighbor, it was planted to save the back hill from erosion by the previous owner. It is a beautiful plant but treat it extreme care and do not allow it to grow. I can't imagine what would happen with a child, someone of lesser health or even more extreme exposure to me with this dangerous plant.

On May 12, 2010, IPM from Boulder, CO wrote:

**THIS PLANT IS A LIST-A NOXIOUS INVASIVE WEED IN COLORADO AND IS STATE MANDATED FOR ERADICATION. IT IS ILLEGAL TO SELL OR CULTIVATE THIS PLANT IN THE STATE OF COLORADO. HAVING THIS PLANT ON YOUR PROPERTY CAN POTENTIALLY LEAD TO FINES EXCEEDING 1000\$. REGARDLESS OF WHICH STATE YOU LIVE IN I HIGHLY SUGGEST THAT NO ONE OBTAIN THIS PLANT, AND WHENEVER POSSIBLE IT SHOULD BE REMOVED AND BAGGED.**

On Apr 6, 2010, tisabira from Muskogee, OK wrote:

I bought a small plant on Saturday and dropped it home before continuing my shopping. I know I touched the plant, although there wasn't any sap leaking from it. During my shopping, my left cheek started to itch and I later broke out into a small rash on that side. it seems I may have been fortunate to get away with so little!

I'm still new at growing things and I like to buy different plants to experiment with (ie, see if they can survive ME) so I'm going to see if the nursery will exchange this for something else.

Thanks for the info from other posters, very helpful.

On Apr 21, 2009, jeff0452 from Rio Rancho, NM wrote:

I was given a couple of these in the fall of last year by a friend, who described them as a self-seeding foliage plant. I wasn't sure if they would establish themselves enough to make it through the winter, since I was planting them so late. I was pleased to see this spring that they not only started growing, but even had small yellow flowers, which developed little orange centers! (I hadn't looked at all the photos on this site yet, so I wasn't expecting flowers.) The shape of the leaves does add interest to the garden. When I was planting them, I did handle the outer surfaces of the plants, but no sap since nothing broke. No allergic reactions so far, but as far as I can remember, my friend and I have not come in contact with the sap yet.

On Oct 9, 2008, jenmomof3 from Bellingham, WA wrote:

**WARNING:** do not plant this plant and remove all from your yard. My kids were playing outside in our maturely landscaped yard. Playing make believe they picked this plant and used it for play. The next morning my son woke up, his eyes swollen almost shut, face swollen and completely red with exception to creases around his nose, large blisters on his chin, forehead and cheeks. We thought he was having an allergic reaction to a plant....it really was a severe contact dermatitis. Please see above posting for how to remove it and please do not plant it!! It is listed as a noxious weed.

On Aug 16, 2008, Bellafleur from Holland, MA (Zone 5a) wrote:

ok, i can understand how people can say that this plant is invasive but here in my yard in Holland MA i would not consider it invasive. Maybe because the majority of the land here is hard soil , clay soil with sand. i dont know. It has taken over 8 years for this plant to produce a few small colonies of maybe 5-6 plants each. They are easy to dig up and remove. i have had that milky substance on my hands and even went without washing my hands for a few hours. I did not know about the threat it has. But im starting to wonder if people are just allergic to it and im not? ive handled this plant many times bare handed and had no problem. watch...now that i said it.... NOOO...not gonna go there. I do love the look of this plant. it can easily be dead headed, though, i have never done it. I welcome its odd foliage in my gardens. If its legal in your state, ive got some to trade. melissa

On Jul 9, 2008, suewylan from North Fork, CA (Zone 7b) wrote:

I love this plant a lot less today.

It was always the first to bloom (in Feb!) and stayed very attractive and interesting all year round...BUT in the last 24 hours I had to go to emergency hospital TWICE, after clipping the flowers back.

After washing my hands of the sticky sap, I must have rubbed my eye and it immediately started to sting and burn and water profusely. By the afternoon I was in excruciating pain In the emergency room, they numbed my eye and irrigated it, then sent me home with antibiotic drops.

The pain became worse after 8 hours, spreading to my other eye, nose and sinuses and, blinded, I was driven again to the hospital for pain relief, numbing drops and finally vicodin. They said my corneas were damaged and sent me to an ophthalmologist. He said the plant has corrosive chemicals in it and had burned my eyes and eyelids. My face where the first tears came down is all burned and peeling.

No wonder the deer don't eat it. I don't know if I'll get rid of this plant, but I'll definitely wear a HAZ MAT suit when trimming it!

On Oct 26, 2007, JuanaWonder from Indianapolis, IN (Zone 5a) wrote:

I purchased this plant at a local garden center last spring. It did not have an identification tag. I have enjoyed it immensely. BUT, yesterday I picked off a few stems. A milky substance dripped on my hands. I immediately washed my hands thoroughly! Later in the day I felt like I have a jalapeño burn on my lips. Several hours later my whole face was on fire! Today I look like and feel like I have been burnt. I know I did not rub this stuff on all over my face. This stuff is treacherous. It took me a few hours to research this plant. I think I will be more careful in my new plant choice in the future. I plan on telling the local garden center what I found. This is a great web site. ...glad I found it.

On May 12, 2007, PhilsFlowers from Ocean Park, Surrey, BC (Zone 6b) wrote:

A friend gave me a small *E. myrsinites* to plant in an area under a porch roof in complete shade to cover a low, poorly constructed concrete wall. It did this job amazingly well in spite of the fact it is not mat-forming. It flowers and probably does produce seeds but I have never seen one. We get gale-force winds here in the coastal area of southern B.C. so I frequently have to untangle its branches. I never knew that this was harmful to skin because I never suffered any ill-effects. If the wind did break or damage a stem, I just cut it back. I love the colour and the unusualness of this plant and was sorry to learn it was such a 'weed' elsewhere.

On Apr 28, 2007, RockabillyKitty from Denver, CO (Zone 5b) wrote:

Myrtle Spurge is not native to Colorado, but was brought here for ornamental planting.

According to the Adams County Parks Department, Myrtle Spurge is growing aggressively across Colorado. However, it is **ILLEGAL** to have it, so if it is in your yard, you are **REQUIRED BY LAW** to remove it.

To get rid of it you should dig it up and put in a plastic bag to avoid spreading seed and put it the trash. You can also kill Myrtle Spurge by spraying with 2, 4 – D. You should wear gloves, long sleeves and long pants while working around the weed.

You should not cut Myrtle Spurge with a lawnmower because it spreads the seeds."

On Apr 23, 2007, Holmberg from Colorado Springs United States wrote:

This plant should not be available for sale in Colorado. It is a primary noxious weed.

On Jul 6, 2006, marlow from Salt Lake City, UT wrote:

Please, please, do not plant this horrible invasive weed in Utah. This stuff is ruining the foothills along the Wasatch Front. It takes over entire hillsides choking out our wonderful native foliage. If you have it in your yard, rip it out today. It will soon be too late to stop this environmental disaster.

On Nov 25, 2004, caron from Woodland Park, CO (Zone 4b) wrote:

Colorado Class A Noxious Weed. Mandatory eradication.

All locations of this plant in Colorado should be immediately reported to the Colorado Department of Agriculture.

On Jul 8, 2004, daryl from vernon, BC (Zone 6a) wrote:

I ALSO LIVE IN THE OKANAGAN VALLEY OF B.C., INTERESTING PLANT TO VIEW .MADE THE ERROR OF NOT CUTTING OFF THE FLOWER HEADS ONE YEAR,MASSIVE SELF SEEDER ,BE CAREFUL.SEEDLINGS THOUGH ARE EASY TO CONTROL.

On May 21, 2004, jennifergo from Fort Collins, CO wrote:

I am a Weed Specialist in Colorado and this plant is a disaster. It is now one of the top priorities on the State of Colorado Noxious Weed List for eradication. It is highly toxic, invasive, and illegal. Please don't market this plant to folks in the western US!

On May 2, 2004, sp wrote:

I have grown this plant in the southern interior of BC (zone 4) on the sunny south side of my house. It grows extremely fast and requires little or no upkeep. It is a great ground cover for hot/dry locations.

On Apr 4, 2004, henryr10 from Cincinnati, OH (Zone 6b) wrote:

We have it growing in partial shade in a very dry bed full of Maple roots and find it very well behaved.

In fact anything that can survive here would be welcome to be invasive.

After 3 years it has only spread about 1 foot w/o dead heading.

On Mar 8, 2004, sue1952 from Utica, MI wrote:

In SE Michigan - makes a great addition to a dry, sunny spot. Has not been invasive for me - but I trim the flowers before they go to seed. It is low growing and would be great for a rock garden too.

On Jun 3, 2003, skylittle wrote:

Previous comments have noted the toxicity. Note that we all may have different sensitivities. BE CAREFUL WITH THIS PLANT. I had a severe reaction after cutting some of the plants. I washed my hands immediately afterwards but then used a paper towel to dry my hands. Then I used the same towel to wipe the sweat from my face and forehead. My first symptoms (in about two hours) were burning lips and tongue (like I'd eaten a spicy meal). Within four hours the underside of my nose was painful to the touch. By the next morning my face was numb and swollen. Within the next day these facial areas began peeling like I had a bad sunburn. Reports in Colorado actually indicate that school kids have learned that they can get out of school by rubbing some of the plant's latex material on their face! Some have ended up in emergency rooms and/or burn units.

On Jul 29, 2002, AnitaB wrote:

This is a beautiful plant. However, the milky sap causes quite a nasty dermatitis. I came in contact with some this afternoon and must have touched my face because I am developing painful blisters. This has been reported on other web sites. Also, the plant is toxic if ingested. So wear gloves if handling this plant and if you get any sap on your hands, wash them immediately.

On Jul 16, 2002, mandarin wrote:

I have seen this plant be extremely invasive. It completely overtook my neighbors garden and in such large numbers the plant is not very attractive. If you have the plant, work hard to contain it so this doesn't happen to you.

On Sep 11, 2001, Joy from Kalama, WA (Zone 8b) wrote:

Also called Donkey tail spurge, Creeping spurge.

Be very careful of the milky white sap that oozes out of a cut Euphorbia stem, as it is poisonous.

Protect open wounds and eyes.

Skin irritation minor or lasting only for a few minutes. Redness, swelling, blisters after some delay following contact with skin. Nausea, vomiting, diarrhea when ingested.

*Word list, frequency*

|    |             |   |             |   |            |
|----|-------------|---|-------------|---|------------|
| 20 | plant       | 5 | gloves      | 4 | cut        |
| 12 | plant       | 5 | remove      | 4 | rid        |
| 17 | plant       | 5 | great       | 3 | dermatitis |
| 18 | sap         | 5 | never       | 3 | spreading  |
| 12 | hands       | 5 | water       | 3 | warnings   |
| 12 | face        | 5 | eyes        | 3 | blisters   |
| 11 | eye         | 5 | nose        | 3 | forehead   |
| 10 | Colorado    | 5 | pain        | 3 | planting   |
| 10 | like        | 5 | wear        | 3 | ILLEGAL    |
| 9  | plants      | 5 | dry         | 3 | careful    |
| 8  | invasive    | 4 | eradication | 3 | foliage    |
| 8  | growing     | 4 | emergency   | 3 | touched    |
| 8  | washed      | 4 | allergic    | 3 | handle     |
| 8  | weed        | 4 | horrible    | 3 | toxic      |
| 8  | yard        | 4 | contact     | 3 | site       |
| 7  | PLANT       | 4 | swollen     | 3 | burn       |
| 6  | seeds       | 4 | Myrtle      | 3 | dead       |
| 5  | immediately | 4 | Spurge      | 3 | felt       |
| 5  | extremely   | 4 | break       | 3 | fire       |
| 5  | trimming    | 4 | drops       | 3 | hard       |
| 5  | noxious     | 4 | milky       | 3 | kids       |
| 5  | burning     | 4 | Weed        | 3 | lips       |
| 5  | flowers     | 4 | grow        | 3 | love       |
| 5  | garden      | 4 | soil        | 3 | rash       |

|   |              |   |         |   |                |
|---|--------------|---|---------|---|----------------|
| 3 | bad          | 2 | seeding | 2 | feel           |
| 2 | self-seeding | 2 | sunburn | 2 | hand           |
| 2 | interesting  | 2 | survive | 2 | heat           |
| 2 | controlled   | 2 | welcome | 2 | kill           |
| 2 | attractive   | 2 | cornea  | 2 | skin           |
| 2 | poisonous    | 2 | damage  | 2 | stem           |
| 2 | treatment    | 2 | rubbed  | 2 | bag            |
| 2 | beautiful    | 2 | toxins  | 2 | dig            |
| 2 | different    | 2 | burned  | 1 |                |
| 2 | substance    | 2 | native  |   | CAREFUL.SEEDL  |
| 2 | disaster     | 2 | pulled  | 1 | INGS           |
| 2 | exposure     | 2 | relief  | 1 | spurgeCreeping |
| 2 | hospital     | 2 | severe  | 1 | antihistamine  |
| 2 | inflamed     | 2 | spurge  | 1 | grandchildren  |
| 2 | ingested     | 2 | wonder  | 1 | ophthamologist |
| 2 | problems     | 2 | itchy   | 1 | sensitivities  |
| 2 | reaction     | 2 | roots   | 1 | aggressively   |
| 2 | swelling     | 2 | avoid   | 1 | excrutiating   |
| 2 | eyelids      | 2 | awful   | 1 | extensively    |
| 2 | NOXIOUS      | 2 | cheek   | 1 | heartbroken    |
| 2 | Redness      | 2 | stems   | 1 | ill-effects    |
| 2 | control      | 2 | sweat   | 1 | infestation    |
| 2 | painful      | 2 | touch   | 1 | POTENTIALLY    |
| 2 | peeling      | 2 | trash   | 1 | precautions    |
| 2 | produce      | 2 | bare    | 1 | treacherous    |
|   |              |   |         | 1 | antibiotic     |

|   |            |   |          |   |         |
|---|------------|---|----------|---|---------|
| 1 | developing | 1 | disposed | 1 | enjoyed |
| 1 | everywhere | 1 | horrific | 1 | eyewash |
| 1 | irritation | 1 | INVASIVE | 1 | eyewear |
| 1 | myrsinites | 1 | irrigate | 1 | garbage |
| 1 | ornamental | 1 | jalapeño | 1 | gardens |
| 1 | vigilantly | 1 | MANDATED | 1 | harmful |
| 1 | bluegreen  | 1 | medicine | 1 | hot/dry |
| 1 | chemicals  | 1 | overtook | 1 | medical |
| 1 | corrosive  | 1 | prolific | 1 | natives |
| 1 | CULTIVATE  | 1 | research | 1 | numbing |
| 1 | dangerous  | 1 | Round-up | 1 | problem |
| 1 | Euphorbia  | 1 | spraying | 1 | Protect |
| 1 | gardeners  | 1 | suffered | 1 | REMOVED |
| 1 | herbicide  | 1 | survives | 1 | ruining |
| 1 | immensely  | 1 | sweating | 1 | sinuses |
| 1 | infection  | 1 | symptoms | 1 | sleeves |
| 1 | Mandatory  | 1 | terrible | 1 | vicodin |
| 1 | pesticide  | 1 | venomous | 1 | BAGGED  |
| 1 | prolonged  | 1 | vomiting | 1 | beauty  |
| 1 | reactions  | 1 | blinded  | 1 | Doctor  |
| 1 | tolerated  | 1 | CAREFUL  | 1 | driven  |
| 1 | clipping   | 1 | choking  | 1 | facial  |
| 1 | covering   | 1 | CUTTING  | 1 | HAZMAT  |
| 1 | critical   | 1 | destroy  | 1 | health  |
| 1 | diarrhea   | 1 | dripped  | 1 | highly  |

|   |        |   |       |   |      |
|---|--------|---|-------|---|------|
| 1 | immune | 1 | kills | 1 | fish |
| 1 | LIST-A | 1 | latex | 1 | hate |
| 1 | Nausea | 1 | minor | 1 | nice |
| 1 | numbed | 1 | nasty | 1 | pull |
| 1 | pretty | 1 | oozes | 1 | SELL |
| 1 | slopes | 1 | pants | 1 | sick |
| 1 | sticky | 1 | risks | 1 | Skin |
| 1 | threat | 1 | sorry | 1 | soap |
| 1 | tongue | 1 | spicy | 1 | die  |
| 1 | upkeep | 1 | steep | 1 | eat  |
| 1 | wounds | 1 | sting | 1 | IPM  |
| 1 | bloom  | 1 | tears | 1 | ivy  |
| 1 | burnt  | 1 | care  | 1 | rip  |
| 1 | crazy  | 1 | cold  | 1 | sad  |
| 1 | FINES  | 1 | deer  |   |      |
| 1 | gummy  | 1 | EASY  |   |      |

*Word list, alphabetical*

|   |               |   |           |   |           |
|---|---------------|---|-----------|---|-----------|
| 1 | aggressively  | 3 | bad       | 3 | blisters  |
| 4 | allergic      | 2 | bag       | 1 | bloom     |
| 1 | antibiotic    | 1 | BAGGED    | 1 | bluegreen |
| 1 | antihistamine | 2 | bare      | 4 | break     |
| 2 | attractive    | 2 | beautiful | 3 | burn      |
| 2 | avoid         | 1 | beauty    | 2 | burned    |
| 2 | awful         | 1 | blinded   | 5 | burning   |

|      |               |   |              |    |               |
|------|---------------|---|--------------|----|---------------|
| 1    | burnt         | 3 | dead         | 1  | extensively   |
| 1    | care          | 1 | deer         | 5  | extremely     |
| 3    | careful       | 3 | dermatitis   | 11 | eye           |
| 1    | CAREFUL       | 1 | destroy      | 2  | eyelids       |
| 1    | CAREFUL.SEEDL | 1 | developing   | 5  | eyes          |
| INGS |               | 1 | diarrhea     | 1  | eyewash       |
| 2    | cheek         | 1 | die          | 1  | eyewear       |
| 1    | chemicals     | 2 | different    | 12 | face          |
| 1    | choking       | 2 | dig          | 1  | facial        |
| 1    | clipping      | 2 | disaster     | 2  | feel          |
| 1    | cold          | 1 | disposed     | 3  | felt          |
| 10   | Colorado      | 1 | Doctor       | 1  | FINES         |
| 4    | contact       | 1 | dripped      | 3  | fire          |
| 2    | control       | 1 | driven       | 1  | fish          |
| 2    | controlled    | 4 | drops        | 5  | flowers       |
| 2    | cornea        | 5 | dry          | 3  | foliage       |
| 1    | corrosive     | 1 | EASY         | 3  | forehead      |
| 1    | covering      | 1 | eat          | 1  | garbage       |
| 1    | crazy         | 4 | emergency    | 5  | garden        |
| 1    | critical      | 1 | enjoyed      | 1  | gardeners     |
| 1    | CULTIVATE     | 4 | eradication  | 1  | gardens       |
| 4    | cut           | 1 | Euphorbia    | 5  | gloves        |
| 1    | CUTTING       | 1 | everywhere   | 1  | grandchildren |
| 2    | damage        | 1 | excrutiating | 5  | great         |
| 1    | dangerous     | 2 | exposure     | 4  | grow          |

|    |             |    |             |    |               |
|----|-------------|----|-------------|----|---------------|
| 8  | growing     | 2  | inflamed    | 1  | myrsinites    |
| 1  | gummy       | 2  | ingested    | 4  | Myrtle        |
| 2  | hand        | 2  | interesting | 1  | nasty         |
| 3  | handle      | 8  | invasive    | 2  | native        |
| 12 | hands       | 1  | INVASIVE    | 1  | natives       |
| 3  | hard        | 1  | IPM         | 1  | Nausea        |
| 1  | harmful     | 1  | irrigate    | 5  | never         |
| 1  | hate        | 1  | irritation  | 1  | nice          |
| 1  | HAZMAT      | 2  | itchy       | 5  | nose          |
| 1  | health      | 1  | ivy         | 5  | noxious       |
| 1  | heartbroken | 1  | jalapeño    | 2  | NOXIOUS       |
| 2  | heat        | 3  | kids        | 1  | numbed        |
| 1  | herbicide   | 2  | kill        | 1  | numbing       |
| 1  | highly      | 1  | kills       | 1  | oozes         |
| 4  | horrible    | 1  | latex       | 1  | opthamologist |
| 1  | horrific    | 10 | like        | 1  | ornamental    |
| 2  | hospital    | 3  | lips        | 1  | overtook      |
| 1  | hot/dry     | 1  | LIST-A      | 5  | pain          |
| 1  | ill-effects | 3  | love        | 2  | painful       |
| 3  | ILLEGAL     | 1  | MANDATED    | 1  | pants         |
| 5  | immediately | 1  | Mandatory   | 2  | peeling       |
| 1  | immensely   | 1  | medical     | 1  | pesticide     |
| 1  | immune      | 1  | medicine    | 7  | PLANT         |
| 1  | infection   | 4  | milky       | 20 | plant         |
| 1  | infestation | 1  | minor       | 17 | plant         |

|    |             |    |               |   |                |
|----|-------------|----|---------------|---|----------------|
| 12 | plant       | 1  | risks         | 3 | spreading      |
| 3  | planting    | 2  | roots         | 4 | Spurge         |
| 9  | plants      | 1  | Round-up      | 2 | spurge         |
| 2  | poisonous   | 2  | rubbed        | 1 | spurgeCreeping |
| 1  | POTENTIALLY | 1  | ruining       | 1 | steep          |
| 1  | precautions | 1  | sad           | 2 | stem           |
| 1  | pretty      | 18 | sap           | 2 | stems          |
| 1  | problem     | 2  | seeding       | 1 | sticky         |
| 2  | problems    | 6  | seeds         | 1 | sting          |
| 2  | produce     | 2  | self-seeding  | 2 | substance      |
| 1  | prolific    | 1  | SELL          | 1 | suffered       |
| 1  | prolonged   | 1  | sensitivities | 2 | sunburn        |
| 1  | Protect     | 2  | severe        | 2 | survive        |
| 1  | pull        | 1  | sick          | 1 | survives       |
| 2  | pulled      | 1  | sinuses       | 2 | sweat          |
| 3  | rash        | 3  | site          | 1 | sweating       |
| 2  | reaction    | 2  | skin          | 2 | swelling       |
| 1  | reactions   | 1  | Skin          | 4 | swollen        |
| 2  | Redness     | 1  | sleeves       | 1 | symptoms       |
| 2  | relief      | 1  | slopes        | 1 | tears          |
| 5  | remove      | 1  | soap          | 1 | terrible       |
| 1  | REMOVED     | 4  | soil          | 1 | threat         |
| 1  | research    | 1  | sorry         | 1 | tolerated      |
| 4  | rid         | 1  | spicy         | 1 | tongue         |
| 1  | rip         | 1  | spraying      | 2 | touch          |

|   |             |   |            |   |         |
|---|-------------|---|------------|---|---------|
| 3 | touched     | 1 | venomous   | 8 | weed    |
| 3 | toxic       | 1 | vicodin    | 4 | Weed    |
| 2 | toxins      | 1 | vigilantly | 2 | welcome |
| 2 | trash       | 1 | vomiting   | 2 | wonder  |
| 1 | treacherous | 3 | warnings   | 1 | wounds  |
| 2 | treatment   | 8 | washed     | 8 | yard    |
| 5 | trimming    | 5 | water      |   |         |
| 1 | upkeep      | 5 | wear       |   |         |

*Figure 2: Word Cloud text*

*Noxious Weed Control Board, Franklin County, Washington State*

Weeds in the News 2012, Myrtle Spurge, By Robin Kusske

Native to Eastern Europe and Western Asia, Myrtle spurge is a Class B noxious weed in Washington State. An escaped ornamental, it is a highly invasive ornamental plant that is popular in xeriscapes and rock gardens. A low-growing succulent, Myrtle spurge usually grows 6 inches tall with stout trailing 1 foot long stems that have clasping spirally arranged blunt blue-gray leaves. The stems, radiating from the center of the plant, rise up at the tips from which the terminally borne flowers emerge in late winter to early spring. The flowers and their subtending bracts are initially greenish-yellow flowers but deepen to a red hue by summer. This hardy plant is tolerant of very cold winter temperatures, summer heat and little irrigation but requires good draining soils.

Myrtle spurge projects its seeds, spreading them as far as 15 feet around the parent plant. Seeds can be ejected when plants are disturbed, sticking to wildlife hair and enabling transport far from the parent plants. Seeds can survive in soil for up to 8 years. Roots fragmented by cultivation can produce new plants as well. This plant prefers well-drained dry to moist soils with partial shade to full sun.

Myrtle spurge is toxic. The active ingredient in Spurges are terpen esters. One such terpen ester is resiniferatoxin, which is 10,000 to 100,000 times more irritating than capsaicin, the substance that makes chili peppers taste hot. Some terpen esters are also known to be carcinogenic. Myrtle spurge sap can cause nausea, vomiting and diarrhea if ingested. Skin contact may include sever blistering and burns, rashes, severe skin irritation and dermatitis. Myrtle spurge has been known to cause anaphylactic shock reactions in sensitive individuals. The sap can cause large painful eruptions on the surface of eyeballs and can result in blindness. All parts of the plant are toxic. The most common victims of myrtle spurge toxicity are children.

Roundup will control Myrtle spurge, but repeated applications will be necessary till the seed bank is depleted. Hand pulling is also an effective method, though extreme caution should be taken. In order to gain control over a population it must be pulled over multiple years. Pull plants early in the season prior to seed formation. Wear protective clothing, eye protection, and gloves when working with Myrtle spurge. Use caution when pulling to not get any sap on your skin, especially on the face or in the eyes. If sap contacts skin make sure to wash that area immediately.

*Colorado Weed Management Association*

Myrtle spurge

*Euphorbia myrsinites*

This perennial weed is often found in rock gardens and is moving into natural areas where it has the potential to do enormous environmental damage.

Although easily removed by hand, this member of the spurge family (Euphorbiaceae), contains a milky sap that is caustic to skin and eyes.

Blue-green leaves clasp fleshy stems which trail along the ground. Inconspicuous yellow-green flowers are surrounded by heart shaped bracts

Spurge, creeping spurge, donkeytail

Colorado Noxious Weed List A

Perennial

Forb

Yellow-green flower-like bracts appear in early spring.

Hard, round seeds.

plant produces trailing stems of fleshy, blue-green alternate leaves.

Mature plants are 4-6 in tall and spread up to 18 in laterally.

Taproot.

The plant exudes a milky sap that can be irritating to the skin.

Myrtle spurge plants exude a milky sap that is considered toxic and may cause skin irritations and in extreme cases, livestock poisoning. Livestock and animals generally avoid myrtle spurge and large infestations can reduce forage production. Myrtle spurge does not tolerate frequent cultivation and therefore is not a problem in crops.

Can inhabit disturbed ground and exclude native plants in remote rocky locations.

Milky latex can cause skin irritation.

Myrtle spurge prefers dry to moist, well-drained soils, in areas that receive partial shade to full sun. It is mainly an escaped ornamental that inhabits disturbed areas and waste places.

Native to Eurasia.

Myrtle spurge is a perennial that produces new stems from the center (tap root) each year. Plants flower in early spring.

## Seed

This species is wide-spread throughout the Front Range and West Slope of Colorado. It is a priority for immediate eradication if found. As with other plants which reproduce solely by seed, integrated management efforts of myrtle spurge must include the elimination of seed production and the depletion of the seed bank. Combine herbicide or mechanical removal of rosettes with removal of flowering parts from any plants that have bolted.

### *Colorado Noxious Weed Control Board [s](#)*

Low growing plant with blue-green, waxy leaves. Flowers are yellow-green petal like bracts

Myrtle spurge (*Euphorbia myrsinites*)

is a low growing perennial with trailing fleshy stems. The leaves are fleshy, blue-green and alternate. Flowers are inconspicuous with yellow-green, petal-like bracts that appear from March to May.

Myrtle spurge spreads by seed and plants are capable of projecting seeds up to 15 feet. The plant grows from a taproot, with new stems emerging in early spring and dying back in the winter. Plants can grow up to 8-12 inches high and 12-18 inches in width.

Myrtle spurge contains a toxic, milky sap which can cause severe skin irritations, including blistering. This plant is poisonous if ingested; causing nausea, vomiting and diarrhea. Wearing gloves, long sleeves, shoes, and eye protection is highly recommended when in contact

with myrtle spurge, as all plant parts are considered poisonous. Myrtle spurge is an invasive ornamental that is native to Eurasia. It is popular with xeriscapes and rock gardens, preferring sunny to partly sunny areas and well drained soils. Myrtle spurge rapidly escapes gardens and invades sensitive ecosystems, out competing native vegetation and reducing wildlife forage.

The soil seed reserve of myrtle spurge is estimated to be eight years.

The site must be monitored for at least nine years after the last flowering adult plants have been eliminated and treatments repeated when necessary.

The key to effective control of myrtle spurge is to remove plants prior to seed set and to detect and remove new populations in natural areas early on. Small areas can be easily removed by mechanical means but should be done early to prevent triggering seed launching. Details

on the back of this sheet can help to create a management plan compatible

with your site ecology. Myrtle spurge is designated as a “ List A” species in the Colorado Noxious Weed Act. It is designated for statewide eradication.

Keeping desirable vegetation healthy and thick will help keep invaders out. Prevent the establishment of new infestations by minimizing disturbance and seed dispersal. Survey your land regularly to detect new invaders and eradicate any new populations quickly. Hand pull or dig when soil is moist. Make certain to pull all the roots and wear rubber gloves and eye protection to protect yourself from the toxic milky sap. Treatment follow up is important to check root fragment resprouts that will occur when the tap root is severed too shallow

*Figure 2: Word List, frequency listing*

|   |            |   |              |   |             |
|---|------------|---|--------------|---|-------------|
| 9 | skin       | 5 | protection   | 4 | fleshy      |
| 9 | sap        | 5 | produces     | 4 | disturbed   |
| 9 | spurges    | 5 | native       | 4 | blue-green  |
| 8 | seed       | 5 | leaves       | 3 | winter      |
| 7 | stems      | 5 | bracts       | 3 | Wear        |
| 7 | soil       | 4 | yellow-green | 3 | spreads     |
| 7 | myrtle     | 4 | well-drained | 3 | root        |
| 7 | early      | 4 | weed         | 3 | pulling     |
| 7 | causing    | 4 | trailing     | 3 | pull        |
| 7 | areas      | 4 | taproot      | 3 | prefers     |
| 6 | toxic      | 4 | spring       | 3 | populations |
| 6 | seeds      | 4 | rocky        | 3 | poisonous   |
| 6 | milky      | 4 | remove       | 3 | parts       |
| 6 | irritation | 4 | perennial    | 3 | partial     |
| 6 | flowers    | 4 | ornamental   | 3 | noxious     |
| 6 | eyes       | 4 | gardens      | 3 | moist       |
| 5 | years      | 4 | flower-like  | 3 | low-growing |

|   |            |   |            |   |               |
|---|------------|---|------------|---|---------------|
| 3 | invasive   | 2 | sever      | 2 | ingested      |
| 3 | hand       | 2 | sensitive  | 2 | infestations  |
| 3 | grows      | 2 | seedbank   | 2 | inconspicuous |
| 3 | gloves     | 2 | repeated   | 2 | immediately   |
| 3 | Eurasia    | 2 | removal    | 2 | highly        |
| 3 | esters     | 2 | reduce     | 2 | help          |
| 3 | escapes    | 2 | rapidly    | 2 | growing       |
| 3 | eradicate  | 2 | projects   | 2 | ground        |
| 3 | control    | 2 | prior      | 2 | fragment      |
| 3 | contact    | 2 | prevent    | 2 | forage        |
| 3 | Colorado   | 2 | popular    | 2 | exudes        |
| 2 | xeriscapes | 2 | petal-like | 2 | extreme       |
| 2 | wildlife   | 2 | parent     | 2 | Euphorbia     |
| 2 | West       | 2 | nausea     | 2 | elimination   |
| 2 | vomiting   | 2 | natural    | 2 | effective     |
| 2 | vegetation | 2 | myrsinites | 2 | dry           |
| 2 | treatments | 2 | mechanical | 2 | diarrhea      |
| 2 | tolerant   | 2 | management | 2 | designated    |
| 2 | sunny      | 2 | long       | 2 | depleted      |
| 2 | sun        | 2 | locations  | 2 | cultivation   |
| 2 | summer     | 2 | livestock  | 2 | contains      |
| 2 | species    | 2 | large      | 2 | caution       |
| 2 | site       | 2 | known      | 2 | blistering    |
| 2 | shade      | 2 | invaders   | 2 | alternate     |
| 2 | severe     | 2 | inhabits   | 2 | Class A       |

|    |              |   |                 |   |                 |
|----|--------------|---|-----------------|---|-----------------|
| 18 | Myrtle       | 1 | stout           | 1 | painful         |
| 14 | plants       | 1 | sticking        | 1 | occur           |
| 12 | plant        | 1 | statewide       | 1 | launching       |
| 11 | avoid        | 1 | State           | 1 | latex           |
| 10 | spurge       | 1 | Slope           | 1 | land            |
| 10 | spurge       | 1 | sleeves         | 1 | irrigation      |
| 1  | working      | 1 | shoes           | 1 | integrated      |
| 1  | wide-spread  | 1 | shock           | 1 | ingredient      |
| 1  | waxy         | 1 | rubber          | 1 | individuals     |
| 1  | waste        | 1 | Roundup         | 1 | hot             |
| 1  | Washington   | 1 | round           | 1 | herbicide       |
| 1  | wash         | 1 | rosettes        | 1 | heat            |
| 1  | victims      | 1 | resprouts       | 1 | heart           |
| 1  | triggering   | 1 | resiniferatoxin | 1 | healthy         |
| 1  | transport    | 1 | reserve         | 1 | hardy           |
| 1  | throughout   | 1 | requires        | 1 | Hard            |
| 1  | thick        | 1 | reproduce       | 1 | hair            |
| 1  | terminally   | 1 | remote          | 1 | greenish-yellow |
| 1  | temperatures | 1 | reactions       | 1 | good            |
| 1  | taste        | 1 | rashes          | 1 | FrontRange      |
| 1  | survive      | 1 | Range           | 1 | frequent        |
| 1  | Survey       | 1 | radiating       | 1 | formation       |
| 1  | surface      | 1 | problem         | 1 | Forb            |
| 1  | succulent    | 1 | priority        | 1 | face            |
| 1  | substance    | 1 | potential       | 1 | Euphorbiaceae   |

|   |               |   |              |   |              |
|---|---------------|---|--------------|---|--------------|
| 1 | establishment | 1 | deepen       | 1 | caustic      |
| 1 | eruptions     | 1 | damage       | 1 | carcinogenic |
| 1 | environmental | 1 | crops        | 1 | capsaicin    |
| 1 | ejected       | 1 | creeping     | 1 | capable      |
| 1 | efforts       | 1 | create       | 1 | burns        |
| 1 | ecosystems    | 1 | competing    | 1 | blue-gray    |
| 1 | ecology       | 1 | compatible   | 1 | blindness    |
| 1 | dying         | 1 | common       | 1 | applications |
| 1 | donkeytail    | 1 | Combine      | 1 | animals      |
| 1 | dispersal     | 1 | cold         | 1 | anaphylactic |
| 1 | dig           | 1 | clothing     | 1 | adult        |
| 1 | desirable     | 1 | chilipeppers |   |              |
| 1 | dermatitis    | 1 | children     |   |              |

*Figure 2: Word Cloud, alphabetical listing*

|    |              |   |              |   |              |
|----|--------------|---|--------------|---|--------------|
| 1  | adult        | 1 | blue-gray    | 1 | children     |
| 2  | alternate    | 4 | blue-green   | 1 | chilipeppers |
| 1  | anaphylactic | 5 | bracts       | 2 | Class A      |
| 1  | animals      | 1 | burns        | 1 | clothing     |
| 1  | applications | 1 | capable      | 1 | cold         |
| 7  | areas        | 1 | capsaicin    | 3 | Colorado     |
| 11 | avoid        | 1 | carcinogenic | 1 | Combine      |
| 2  | seedbank     | 7 | causing      | 1 | common       |
| 1  | blindness    | 1 | caustic      | 1 | compatible   |
| 2  | blistering   | 2 | caution      | 1 | competing    |

|   |             |   |               |   |                 |
|---|-------------|---|---------------|---|-----------------|
| 3 | contact     | 1 | ejected       | 3 | gloves          |
| 2 | contains    | 2 | elimination   | 1 | good            |
| 3 | control     | 1 | environmental | 1 | greenish-yellow |
| 1 | create      | 3 | eradicate     | 2 | ground          |
| 1 | creeping    | 1 | eruptions     | 2 | growing         |
| 1 | crops       | 3 | escapes       | 3 | grows           |
| 2 | cultivation | 1 | establishment | 1 | hair            |
| 1 | damage      | 3 | esters        | 3 | hand            |
| 1 | deepen      | 2 | Euphorbia     | 1 | Hard            |
| 2 | depleted    | 1 | Euphorbiaceae | 1 | hardy           |
| 1 | dermatitis  | 3 | Eurasia       | 1 | healthy         |
| 2 | designated  | 2 | extreme       | 1 | heart           |
| 1 | desirable   | 2 | exudes        | 1 | heat            |
| 2 | diarrhea    | 6 | eyes          | 2 | help            |
| 1 | dig         | 1 | face          | 1 | herbicide       |
| 1 | dispersal   | 4 | fleshy        | 2 | highly          |
| 4 | disturbed   | 4 | flower-like   | 1 | hot             |
| 1 | donkeytail  | 6 | flowers       | 2 | immediately     |
| 2 | dry         | 2 | forage        | 2 | inconspicuous   |
| 1 | dying       | 1 | Forb          | 1 | individuals     |
| 7 | early       | 1 | formation     | 2 | infestations    |
| 1 | ecology     | 2 | fragment      | 2 | ingested        |
| 1 | ecosystems  | 1 | frequent      | 1 | ingredient      |
| 2 | effective   | 1 | FrontRange    | 2 | inhabits        |
| 1 | efforts     | 4 | gardens       | 1 | integrated      |

|    |             |    |             |   |                 |
|----|-------------|----|-------------|---|-----------------|
| 2  | invaders    | 1  | occur       | 1 | Range           |
| 3  | invasive    | 4  | ornamental  | 2 | rapidly         |
| 1  | irrigation  | 1  | painful     | 1 | rashes          |
| 6  | irritation  | 2  | parent      | 1 | reactions       |
| 2  | known       | 3  | partial     | 2 | reduce          |
| 1  | land        | 3  | parts       | 1 | remote          |
| 2  | large       | 4  | perennial   | 2 | removal         |
| 1  | latex       | 2  | petal-like  | 4 | remove          |
| 1  | launching   | 12 | plant       | 2 | repeated        |
| 5  | leaves      | 14 | plants      | 1 | reproduce       |
| 2  | livestock   | 3  | poisonous   | 1 | requires        |
| 2  | locations   | 2  | popular     | 1 | reserve         |
| 2  | long        | 3  | populations | 1 | resiniferatoxin |
| 3  | low-growing | 1  | potential   | 1 | resprouts       |
| 2  | management  | 3  | prefers     | 4 | rocky           |
| 2  | mechanical  | 2  | prevent     | 3 | root            |
| 6  | milky       | 2  | prior       | 1 | rosettes        |
| 3  | moist       | 1  | priority    | 1 | round           |
| 2  | myrsinites  | 1  | problem     | 1 | Roundup         |
| 18 | Myrtle      | 5  | produces    | 1 | rubber          |
| 7  | myrtle      | 2  | projects    | 9 | sap             |
| 5  | native      | 5  | protection  | 8 | seed            |
| 2  | natural     | 3  | pull        | 6 | seeds           |
| 2  | nausea      | 3  | pulling     | 2 | sensitive       |
| 3  | noxious     | 1  | radiating   | 2 | sever           |

|    |           |   |              |   |              |
|----|-----------|---|--------------|---|--------------|
| 2  | severe    | 1 | substance    | 2 | vegetation   |
| 2  | shade     | 1 | succulent    | 1 | victims      |
| 1  | shock     | 2 | summer       | 2 | vomiting     |
| 1  | shoes     | 2 | sun          | 1 | wash         |
| 2  | site      | 2 | sunny        | 1 | Washington   |
| 9  | skin      | 1 | surface      | 1 | waste        |
| 1  | sleeves   | 1 | Survey       | 1 | waxy         |
| 1  | Slope     | 1 | survive      | 3 | Wear         |
| 7  | soil      | 4 | taproot      | 4 | weed         |
| 2  | species   | 1 | taste        | 4 | well-drained |
| 3  | spreads   | 1 | temperatures | 2 | West         |
| 4  | spring    | 1 | terminally   | 1 | wide-spread  |
| 10 | spurge    | 1 | thick        | 2 | wildlife     |
| 10 | spurge    | 1 | throughout   | 3 | winter       |
| 9  | 9purges   | 2 | tolerant     | 1 | working      |
| 1  | State     | 6 | toxic        | 2 | xeriscapes   |
| 1  | statewide | 4 | trailing     | 5 | years        |
| 7  | stems     | 1 | transport    | 4 | yellow-green |
| 1  | sticking  | 2 | treatments   |   |              |
| 1  | stout     | 1 | triggering   |   |              |

*Figure 3: Word Cloud Text*

*Mending the Commons Press Release*

**Front Range area agencies urge landowners to “Purge Your Spurge!”**

*This noxious weed can take over wild and residential landscapes and is a danger to people, plants, and wildlife.*

Multiple *Purge Your Spurge* events will take place this spring for residents to bring in bags of myrtle spurge and **receive free native plants** in exchange. Always bag and dispose of myrtle spurge and don't compost unless a commercial facility.

With the arrival of spring Front Range county area agencies are warning residents to aggressively remove the noxious weed commonly known as myrtle spurge. It may look harmless, but this plant can cause harm to people and natural areas.

Myrtle spurge (*Euphorbia myrsinites*) is a List A noxious weed, and the Colorado Noxious Weed Act (C.R.S. 35-5.5-101-119) requires its eradication. Hand pulling and digging are the most effective methods used to control this plant. Myrtle spurge contains a toxic, milky sap which can cause severe skin irritations, including blistering. This plant is poisonous if ingested, causing nausea, vomiting, and diarrhea. Wearing gloves, long sleeves, shoes, and eye protection is highly recommended when in contact with myrtle spurge, as all plant parts are considered poisonous.

This invasive weed, also known as donkeytail spurge or creeping spurge, is a low-growing perennial with trailing fleshy stems. It spreads rapidly to surrounding areas and can "jump the fence" to natural areas to displace native vegetation and reduce forage for wildlife. The leaves are fleshy, blue-green and alternate. The flowers appear from March to May and are bright yellow-green with petal-like bracts. Myrtle spurge is commonly found in Denver, FrontRange, and the surrounding lands and has become a serious problem in the foothills and mountain ecosystems.

To help combat myrtle spurge, FrontRange county agencies have launched an educational outreach program for residents called *Purge Your Spurge*. Volunteers and staff are canvassing local neighborhoods to encourage residents to remove it from their property or utilize volunteer help for removal (offered by the Mending the Commons volunteers).

### *Mending the Commons; Instructions to Volunteers*

Thank you very much for signing up to "Purge the Spurge" from the FrontRange Foothills on Sunday, May 5.

We hope that you are still planning to come, but if you can't attend, please let us know immediately! That's really important for planning purposes!.

Myrtle Spurge is an A-listed weed in Colorado. That means that it is an aggressive invasive exotic species which threatens our native ecosystems, yet the distribution is limited enough that eradication is possible. In fact, eradication is mandated by the state of Colorado.

How did Myrtle Spurge get here? Decades ago, this non-native plant became a popular

landscape plant, because it is drought tolerant, requires no care, and has showy yellow spring flowers. These plants quickly began to escape out of the yards of home owners, into open spaces. Unchecked, this plant could take over large areas displacing native plants and impacting native wildlife.

Land agencies like FrontRange County, agency and US Forest Service have crews that remove patches on public lands every year. And, they have been making excellent progress! MTC has helped in those efforts for years.

However, there are numerous patches of myrtle spurge on private land throughout the FrontRange foothills. Land agency weed crews are unable (for the most part) to work on private land, so many of these patches continue to spread, eventually spilling onto public lands.

Mending the Commons volunteers have teamed up with FrontRange County, agencies to focus the efforts of this project on private lands. FrontRange County sent a letter to request permission from private land owners for volunteers to come remove myrtle spurge. Many have gratefully accepted this opportunity to improve the health of their land and in the process help protect the greater watershed from invasion of this destructive plant.

Luckily, hand pulling is a highly effective way to remove myrtle spurge, reducing populations by 95% in just one year. **That's where you come in!**

*Recruitment for participation in the 4<sup>th</sup> year of Purge the Spurge activities*

**CALLING ALL ANTI-WEED (No, not that weed) ACTIVISTS!!!! ... you know, the one that's still illegal: MYRTLE SPURGE!**

Mending the Commons is gearing up for another spring of hitting the hills to hunt down that most un-charismatic of weeds: Myrtle Spurge!

In 2016 we'll be reaching out to residents of FrontRange and we're looking for Outreach volunteers (no experience necessary) to help canvass these areas with information about identifying myrtle spurge (*Euphorbia myrsinites*) and how to get FREE VOLUNTEER ASSISTANCE with eradication of the weed!

**Sign up for a fun and informational evening on Wednesday, March 9th to learn:**

- All about the [Purge Your Spurge](#) campaign
- How to identify [Myrtle Spurge](#)
- Fun and friendly tactics for engaging your neighbors and fellow good citizens in the fight against Spurge
- How Myrtle Spurge (and NOT that other weed you're always hearing about) is the real menace to Colorado!

- Upcoming Volunteer opportunities to remove myrtle spurge, or exchange bagged plants for free native plants!

### **Don't let the weeds win!**

*Note: The frequency list is the word cloud represented in the paper. It was adapted to accommodate all words. This meant reducing the number of times specific locations were mentioned. The accurate representation of the words in the text is found in the alphabetical list.*

#### *MTC word list, frequency*

|    |             |   |               |   |              |
|----|-------------|---|---------------|---|--------------|
| 19 | FrontRange  | 2 | opportunities | 2 | surrounding  |
| 15 | spurge      | 2 | outreach      | 5 | volunteers   |
| 14 | Spurge      | 2 | protect       | 2 | weeds        |
| 11 | mountain    | 2 | reduce        | 2 | year         |
| 10 | myrtle      | 2 | area          | 1 | ACTIVISTS    |
| 9  | County      | 2 | cause         | 1 | agency       |
| 9  | plant       | 2 | countycrews   | 1 | aggressive   |
| 9  | weed        | 2 | ecosystems    | 1 | aggressively |
| 9  | Myrtle      | 2 | effective     | 1 | A-listed     |
| 7  | Purge       | 2 | efforts       | 1 | ANTI-WEED    |
| 3  | Commons     | 2 | Euphorbia     | 1 | attend       |
| 6  | native      | 2 | exchange      | 3 | bagged       |
| 6  | plants      | 2 | fleshy        | 1 | blistering   |
| 7  | remove      | 2 | flowers       | 1 | blue-green   |
| 5  | areas       | 2 | foothills     | 1 | bracts       |
| 5  | residents   | 2 | highly        | 1 | bright       |
| 4  | noxious     | 2 | invasive      | 1 | campaign     |
| 4  | agencies    | 2 | known         | 1 | canvass      |
| 4  | Colorado    | 2 | Mountain      | 1 | canvassing   |
| 4  | eradication | 2 | myrsinities   | 1 | citizens     |
| 5  | help        | 2 | natural       | 1 | combat       |
| 4  | land        | 2 | OpenSpace     | 1 | compost      |
| 4  | lands       | 2 | owners        | 1 | contact      |
| 4  | private     | 2 | Parks         | 1 | continue     |
| 4  | spring      | 2 | people        | 1 | control      |
| 3  | patches     | 2 | planning      | 1 | creeping     |
| 3  | Mending     | 2 | poisonous     | 1 | danger       |
| 3  | wildlife    | 2 | publicland    | 1 | destructive  |
| 2  | displacing  | 2 | pulling       | 1 | diarrhea     |
| 2  | landscape   | 2 | requires      | 1 | digging      |

|   |              |   |               |   |                |
|---|--------------|---|---------------|---|----------------|
| 1 | dispose      | 1 | information   | 1 | rapidly        |
| 1 | distribution | 1 | ingested      | 1 | request        |
| 1 | donkeytail   | 1 | invasion      | 1 | residential    |
| 1 | drought      | 1 | irritations   | 1 | sap            |
| 1 | educational  | 1 | jump          | 1 | serious        |
| 1 | encourage    | 1 | landowners    | 1 | severe         |
| 1 | engaging     | 1 | large         | 1 | shoes          |
| 1 | escape       | 1 | launched      | 1 | showy          |
| 1 | excellent    | 1 | learn         | 1 | skin           |
| 1 | exotic       | 1 | leaves        | 1 | sleeves        |
| 1 | experience   | 1 | letter        | 1 | species        |
| 1 | eye          | 1 | local         | 1 | spilling       |
| 1 | fellow       | 1 | low-growing   | 2 | spreads        |
| 1 | fence        | 1 | mandated      | 1 | staff          |
| 1 | fight        | 1 | menace        | 1 | stems          |
| 1 | Foothills    | 1 | milky         | 1 | tactics        |
| 1 | forage       | 1 | Nature        | 1 | Thank          |
| 1 | Forest       | 1 | nausea        | 1 | threatens      |
| 1 | friendly     | 1 | neighborhoods | 1 | tolerant       |
| 1 | Fun          | 1 | neighbors     | 1 | toxic          |
| 1 | gloves       | 1 | non-native    | 1 | trailing       |
| 1 | good         | 1 | numerous      | 1 | un-charismatic |
| 1 | gratefully   | 1 | open spaces   | 1 | Unchecked      |
| 1 | Hand         | 1 | perennial     | 1 | vegetation     |
| 1 | harm         | 1 | permission    | 1 | vomiting       |
| 1 | harmless     | 1 | petal-like    | 1 | warning        |
| 1 | health       | 1 | popular       | 1 | watershed      |
| 1 | hills        | 1 | populations   | 1 | wild           |
| 1 | hunt         | 1 | problem       | 1 | win            |
| 1 | identify     | 1 | process       | 1 | work           |
| 1 | identifying  | 1 | program       | 1 | yards          |
| 1 | illegal      | 1 | progress      | 1 | years          |
| 1 | impacting    | 1 | project       | 1 | yellow         |
| 1 | important    | 1 | property      | 1 | yellow-green   |
| 1 | improve      | 1 | quickly       |   |                |

*MTC word list, alphabetical*

|   |           |   |              |   |           |
|---|-----------|---|--------------|---|-----------|
| 1 | ACTIVISTS | 1 | aggressive   | 1 | A-listed  |
| 6 | agencies  | 1 | aggressively | 1 | ANTI-WEED |

|   |              |   |             |    |               |
|---|--------------|---|-------------|----|---------------|
| 2 | area         | 1 | excellent   | 1  | jump          |
| 5 | areas        | 2 | exchange    | 4  | land          |
| 1 | attend       | 1 | exotic      | 1  | landowners    |
| 3 | bagged       | 1 | experience  | 4  | lands         |
| 1 | blistering   | 1 | eye         | 2  | landscape     |
| 1 | blue-green   | 1 | fellow      | 1  | large         |
| 1 | bracts       | 1 | fence       | 1  | launched      |
| 1 | bright       | 1 | fight       | 1  | learn         |
| 1 | campaign     | 2 | fleshy      | 1  | leaves        |
| 1 | canvass      | 2 | flowers     | 1  | letter        |
| 1 | canvassing   | 2 | foothills   | 1  | local         |
| 2 | cause        | 1 | Foothills   | 1  | low-growing   |
| 1 | citizens     | 1 | forage      | 1  | mandated      |
| 4 | Colorado     | 1 | friendly    | 1  | menace        |
| 1 | combat       | 5 | Front       | 3  | Mending       |
| 3 | Commons      | 5 | FrontRange  | 1  | milky         |
| 1 | compost      | 4 | FrontRange  | 11 | mountain      |
| 1 | contact      | 1 | Fun         | 2  | Mountain      |
| 1 | continue     | 1 | gloves      | 2  | myrsinities   |
| 1 | control      | 1 | good        | 10 | myrtle        |
| 2 | countycrews  | 1 | gratefully  | 9  | Myrtle        |
| 1 | creeping     | 1 | Hand        | 6  | native        |
| 1 | danger       | 1 | harm        | 2  | natural       |
| 1 | destructive  | 1 | harmless    | 1  | Nature        |
| 1 | diarrhea     | 1 | health      | 1  | nausea        |
| 1 | digging      | 5 | help        | 1  | neighborhoods |
| 2 | displacing   | 2 | highly      | 1  | neighbors     |
| 1 | dispose      | 1 | hills       | 1  | non-native    |
| 1 | distribution | 1 | hunt        | 4  | noxious       |
| 1 | donkeytail   | 1 | identify    | 1  | numerous      |
| 1 | drought      | 1 | identifying | 3  | OpenSpace     |
| 2 | ecosystems   | 1 | illegal     | 2  | opportunities |
| 1 | educational  | 1 | impacting   | 2  | outreach      |
| 2 | effective    | 1 | important   | 2  | owners        |
| 2 | efforts      | 1 | improve     | 2  | Parks         |
| 1 | encourage    | 1 | information | 3  | patches       |
| 1 | engaging     | 1 | ingested    | 2  | people        |
| 4 | eradication  | 1 | invasion    | 1  | perennial     |
| 1 | escape       | 2 | invasive    | 1  | permission    |
| 2 | Euphorbia    | 1 | irritations | 1  | petal-like    |

|   |             |    |             |   |                |
|---|-------------|----|-------------|---|----------------|
| 2 | planning    | 7  | remove      | 1 | threatens      |
| 9 | plant       | 1  | request     | 1 | tolerant       |
| 6 | plants      | 1  | residential | 1 | toxic          |
| 2 | poisonous   | 5  | residents   | 1 | trailing       |
| 1 | popular     | 1  | sap         | 1 | un-charismatic |
| 1 | populations | 1  | serious     | 1 | Unchecked      |
| 4 | private     | 1  | severe      | 1 | vegetation     |
| 1 | problem     | 1  | shoes       | 5 | volunteers     |
| 1 | process     | 1  | showy       | 1 | vomiting       |
| 1 | program     | 1  | skin        | 1 | warning        |
| 1 | progress    | 1  | sleeves     | 1 | watershed      |
| 1 | project     | 1  | species     | 9 | weed           |
| 1 | property    | 1  | spilling    | 2 | weeds          |
| 2 | protect     | 2  | spreads     | 1 | wild           |
| 2 | publicland  | 15 | spurge      | 3 | wildlife       |
| 2 | pulling     | 9  | Spurge      | 1 | win            |
| 7 | Purge       | 5  | spurge      | 1 | work           |
| 1 | quickly     | 1  | staff       | 1 | yards          |
| 5 | Range       | 1  | stems       | 3 | year           |
| 1 | rapidly     | 1  | tactics     | 1 | yellow         |
| 2 | reduce      | 1  | Thank       | 1 | yellow-green   |

## APPENDIX

*Field Notes: Native Plant Exchanges**Second Town: 2014*

Arrived at the County Fairgrounds where a large garbage truck was located in the parking lot next to the Humane Society. Surrounded by a large dirt parking area, and cones surrounding the truck. As I drove up, I saw LP and KR, who waved to greet me. Two other men were there. Behind the truck were two tables, both laden with materials. A car and a pickup were to the E of the truck. It looked a bit empty and forlorn, but the mood of those staffing the event was positive, even cheerful.

We greeted each other, and I was introduced to the men, both young, and city of [Second town] employees, BF and ??.

I didn't know you would be here, I said to LP

I live in [Second town]. I'm glad to see you.

I guess I have to out myself, I think you knew I was a student at CU, and I've been doing research on outdoor recreation, mostly hiking, but I started to get very interested in this event and the spurge eradication and I want to do my research on it. I'm applying to get a change to my IRB to include it.

The reaction was immediately excited from the KR and BF, you want to include people who participate and who benefit?

Yes,

BF Would you want to include people in the city.

KR-That's all public record, isn't it? *he's asking BF* Yes it is.

*This is much more enthusiastic than I had anticipated. the public employees immediate realized the potential benefit to them.*

“This would be great, because what we do now is pretty legalistic. They get letter that sounds like they are going to have a lien on their house.” I laugh, but KR continues, “no really that's what it's like. We want to move to a much softer approach. “

*We have a conversation about the impossibility of eradication*

I- I want to talk to you about the program. It's very ambitious.

KR eyes widen, roll. “It is so hard. The closer you get (to eradication) the harder it is. Pockets get further apart and it’s harder to find them.

“It’s better to start on the perimeter and move toward the center.” He demonstrates by grabbing and imaginary fistful of plant. You can remove the center but it squeezes out in all directions.

BF says would you like to interview people in the city too and people who aren’t removing. Yes yes, I say.

*I ask to stay with them and do for the whole day. this is a public event, widely advertised and covered by my current IRB.*

The first car arrives and it is a man with a dog. He has two small bags of spurge. He is surrounded by the crew, save the plant guy, who hands out the free native plants that can replace spurge.

Thanks so much for coming. We have some information for you. Would you mind filling out this participation form (which also includes a questions asking whether they will volunteer to help pull spurge.) Do you want some replacement plants? *This conversation is repeated pretty much the same over the day*

Early in the day people are asked which kind of plant they would prefer and get a bag with a few samples of that. Later in the day, a bag with 6 plants, one of each on hand, are handed out. Explicit care instructions are given.

this plant has a yellow flower, this one is red... They will get about so high (hand measurement from ground), this is more like a ground cover. Questions are answered about sun/part sun.

“The first year keep them watered, but they are native, so next year you won’t have to water, they are adapted to the climate here.” (BF seemed to have this line)

The tables of literature are presented for each person to peruse. Handouts with two full sides printed with information on three of the available plants are given. Booklet of all CO noxious weeds, replacement garden plants, and handouts on other noxious plants in CO (Russian Olive, thistles, etc.) are offered. These range from single sheets of paper to glossy spiral notebooks with full color photos.

The rapid spread of the plant is address by KR

“this is really hard to eradicate, we really appreciate what you’ve done. You have to look for seedlings next year. Seeds stay viable for 9 years and they can spread 15 ft. from the plant.”

“This is great your neighborhood doesn’t have a severe problem. It would be terrible if you ended up with a problem like the one in PB development. They have so many hotspots. So keep after the plant. Tell your neighbors how important it is to get rid of it.”

The conversation between KR, BF and I about cost for eradication.

I think city of B spends \$ It's so expensive. About \$250K for the county? (I am not sure of these numbers now.)

BF, I think that COL spends about \$15K on just myrtle spurge.

LP says that Pesticide use is not popular in the COB but the county has the info, but the MTC didn't want to use the same information.

A small truck with garbage bags piled over the tops of the cargo bed and tied down with rope pulls up. Whoa!! Everyone goes over.

The woman gets out, "I talked to you, or by email. I'm S."

"Oh, you talked to me too," says LP.

"That's right.

She has 44 bags of spurge. She gets her photo taken by LP multiple times. "It's so good to be with people who appreciate what I did." My teenagers wouldn't help me with it.

From LP she gets two bags of native grass seed, to reseed the disturbed area.

KR "if you get 9 days of water out of 14 you should be alright. " She grimaces, that will be hard. The pulled area is in a ravine and hard to reach.

She is not done, she will hire help and help herself to pull from her neighbor's house. He has broken his back, 2 yrs ago and can't do it. A third neighbor across the ravine has it, but on a sheer drop into the ravine.

KR you can spray, that's the best and it won't disturb the land as much. Talk to your neighbor.

It wouldn't be good to leave it, she says. It's right across from mine.

She agreed to a interview. She has driven from COB and the truck was borrowed, KR tells me. "Look," he says, showing the form she has filled out. "Harlequin Gardens (a native plant specialty garden). I talked to him and he said he would put it in his newsletter. He reaches about 2,000 people. She said that when she saw it in the newsletter she knew she had to do something about it."

Another car comes up, a woman who has had a hard time finding it, and is irritated, She needs information. Gets plant info.

This happens again with a woman who has driven around, and gone home to get the location information and returned again.

KR, where did you get the information. (from the city newsletter, it has not put in the location near the Humane society.)

KR This is our first year. We have to make some improvements.

LP goes to inform the farmer's market info booth where the exchange is located.

KR says I tried to get this set up near the farmers' market but they wouldn't let me. They have a lease. When I reserved, this is the place they gave me. I didn't have a choice."

LP comes back. "Only one person has asked about this at the booth."

KR there are 5 events here at the fairgrounds, lists; Farmer's market, 4-h horse show, kid expo, soil class.

A long break between visits and we talk in the shade of the pines. Dogs, Cats, and wildlife sightings. A osprey and three storks have flown overhead. I see a heron in the distance, and they talk about the rookeries in the county... then eagle nests, nests that failed, other sightings. a bobcat, a lynx, marmots, KR has seen the other N.Am. marmot in AK. Another dark animal, debate on what it was. Otter, mink. KR has seen a wolverine, only one known in CO, he describes the way it moved, up a nearly vertical rise in the snow.

(The only one of its kind of gets to me, but I don't speak. Something to bring up later)

We talk about winged migration, TV shows on nature, goose and man pairing. the duck that goes on deliveries. LP talks about imprinting. I listen, mention the goose and duck imprinting on people who then fly ultralights to film them in the air.

Conversation breaks when Another woman has finally found us, also irritated. she has a plant tray and a bag of spurge. She is getting info (see above) when another woman comes walking across the parking lot with her very small dog. she is not happy and tries to make sure that each person at the station knows. You could have put up signs, "We did," I say. they are here and at the corner." Yes, but I came from that direction (points north). Others step forward to Yes, it's our first year. We need to have some improvments. She gets plants and is still not happy.

Meanwhile, the woman with the tray has not been served. KR is holding the tray, talking to the irate woman and I say to her, Do you want some plants? I bring her over to the truck. She gets a bag of six. "I brought 12 (spurge), do you think I could get some more plants?" At that point they were still being careful, so I discouraged her. "I was just trying to get as much as I could," she says, conspiratorially. She agrees to an interview.

A woman with SUV gets out, she has several bags. The two children climb out of the truck when she is looking at plants, they climb back in. She is cheerful and happy to be getting the plants. Everyone is happy again, after the last unhappy incident. There is a long conversation at the truck, which I really don't hear.

She goes back to her vehicle and I ask her for an interview, agrees.

A young couple comes with two brown bags. This is near the end. They are in a new house. This is new to them, as they are newcomers. He is much more involved with the plants and wants more info. His wife hangs back. She says they moved here just before the flood. They were on the east coast when it hit on their wedding weekend. This is their first year in the house and the plant was there. He gets an extra bag of plants and takes info on other noxious weeds. Very enthusiastic.

Another car with an older man. He has a flower, but it is not spurge. He has lambs ear, and wants to know how to get rid of it. You can't pull it, it has rhizomes. He says. KR says no, you have to spray. Use 2-4D, it won't kill the grass. You can't get rid of it mechanically.

BF- would you like some plants? The elder is happily surprised. takes plants, info.

A total of 11 people have come with plants. The clouds have come up and the wind starts to blow the flyers around. This is a signal to start packing up.

I affirm that I will contact KR "Just send me an email with some time suggestions."

I tell BF he will hear from me. I'll be in touch.

To LP: I'll see you at the pull or before that,"

I'll let you know when we will get together for the party (for the recruitment team.)

*Native Plant Exchange  
First Town, 2014*

Arrived at site in First Town around 10:30 stayed until 1 p.m.

Exchange program in the NE corner of the lot. Another plant sale was held to the West. Some people looking for plant sale got this mixed up and ended up at the spurge end, but this was taken as an opportunity to educate about the need to remove spurge. Materials were handed out. The 30 yard truck was nearly full at the end with bagged spurge. Several were large bags (30 gallon yard waste bags). one person came with paper yard waste bags.

KR was there, as well as quite a few city employees. COB had many more plants available, about a dozen, and the left over county plants were there as well. They offered two gallon size plants and 4 small plugs to anyone who brought in spurge, regardless of amount. Plants included bee balm, black-eyed susan, a local coneflower, rocky mountain columbine, The plants were separately clumped, fronted by full color photos and symbols giving basic care requirements (sun, water needs)

I was told by one employee (susan) that one person went and changed clothing, returned, got spurge from the loader and brought the bag over and received plants. "Isn't that amazing what he did for like, \$15 worth of plants?"

The COB employees were from enforcement, including one police officer, city code enforcement, and open space enforcement. Everyone was very happy to learn I was doing this project and agreed to interviews and access to the quant. data used to measure success in the program. This includes the info from last year's exchange (and probably next year's exchange). Exchanged business cards and told them I would call them as soon as the green light came from the addendum to my research plan. I also was able to connect with two people who brought in spurge. Got email and gave my card and will contact as above.

I mostly observed and gave some plant advice occasionally.

COBE guesstimated the event brought in 150 people. They were all filling out the forms as had been done in [Second town]. This time MTC was not present, but the MTC info was still on this form. (I should have gotten one of those, but I can probably get one from LP or KR).

Curlygirl told me that the city had all its own information, because they were not advocating spraying. only mechanical removal. She gave me the spurge flyer that was different from what the county used. We don't want people using sprays, she told me.

Last year they collected 2.25 tons, but this year it looks like more.

Thin girl told me that last year a truck came in full of spurge that had not been bagged. I dragged it over to the loader, "I told him, you're not getting your tarp back. He said 'that's fine.'"

One person came in from Hillside, and KR knew them immediately. We got your neighbor, he said. "Did you get the house on the corner of talltree and Vista?" "I think that's where I was," I said. "It was a blanket."

"You can see it from the road," she said.

She talked to Kurt about the other neighbor, It sounded like they didn't want help and there might have been some (minor) conflict. She and the man with her (husband?) live at the top of the hill. "there's no one above us. she said. "Well, only a road."

I was also listening to another woman who was talking to Clarissa, about neighbors who didn't take care of spurge. She's frail, she's low income. she rents out rooms to people (men) "Her two sons live there, they could pull it out. All the men who live there could do the work." Someone from enforcement came to visit her last year "and they didn't do anything because she's low income." That's not right, says Clarissa, who was listening to her. "What's the road?" Olive (I think). I'll remember that, says Clarissa.

The woman went on: "She has a back yard that she never took care of, but now they are growing marijuana back there. As soon as it was legal." She laughed. "You should have seen them all out there, in their parkas, in the snow, making a garden."

The woman had brought spurge from her place and from along the fenceline with her neighbor, "I take care of it to protect my garden." She had a rock garden along this area. She was looking for plants that would go in this area.

She talked about the roots. You have to get at least 4 inches. You should have heard me. Every time I got a long root I'm hollering. "That's what I celebrate."

*(This is exactly what is celebrated by volunteers who take out spurge. The bigger the root, the bigger the victory.)*

The plant exchange was very busy, especially considering the quiet event in [Second town].

KR, "I'm thinking about getting food trucks next year. Making it a bigger event."

*(I suggested involving the garden club, but also the Master Gardener office is also in the fairgrounds.)*

"People come in waves," says Thinmint.

One woman asked me what grew in shade that didn't have to be watered. "I'm looking for an invasive plant that's not such a problem," she said. I told her she should look for plants that worked in dry shade. "It's one of the hardest areas to plant," I told her.

Another woman told curly girl, “I’ll tell you about another plant that’s invasive. It’s pink vetch. It’s all over and it’s hard to get rid of. Why aren’t you working on that?” “Well there are some invasive plants that aren’t noxious,” she said.

People who came to look for plants were assisted by two city people. One a friendly young man and a quiet young woman. They seemed knowledgeable. One conversation was about putting plants in despite the cold and snow predicted. You can put them in on Monday, not that’s when the weather is supposed to be the coldest, she said. Susan thought it would be OK to plant now. “They’re natives. They’re hardy.” (Were these cold hardened? I asked, but no one answered. Red said don’t plant until after the cold spell.

Two teens from Fairmont HS came. They have a food garden and were trying to get some plants for around the area. Susan helped them as well. They took a number of flowering plants for their garden, and were advised not to take any grasses. The girls conferred with each other on the plants. They were wearing dresses and sandals. One had a ring on a toe. Both were wearing eye glasses.

They were “so cute.” (repeated several times by Susan) They were the youngest people who came although a number of 20 somethings also came with exchanges. Most people who came were casually dressed. Some were in work clothes, as if they had just finished pulling. One man with a teenaged boy had an English accent. He was describing the pulling he did to KR. He did the project over a couple days. “I wasn’t paying attention the date of this event. Then yesterday I was wondering what I could do with all the spurge and I saw this event was today.”

Two people were from Hillsides.

KR knew a few people who came. “You made it,” he would say to them. He has a very friendly manner. Joking, and familiar with those who came.

The city people were a bit suspicious of his interaction, because of the pesticide/herbicide issue. They looked at him as representing the county, which was being less careful (caring?) about the repercussions of pesticide.

Susan said to curly girl, Neonicitinoides, am I saying it right? I didn’t know anything about that until I saw it in the paper, (an article with curlygirl as expert) I’ve been practicing.

“That’s a perfect example of ‘you don’t know what you don’t know,’” says thinmint to curlygirl. She had used this phrase with several people who had come in to see what spurge looked like. Curly girl didn’t respond to this.

At the end, they began putting plants away in the truck. There may be another small event, according to curly girl. I helped load the truck. A few more stragglers came in and plants were given out. KR left about 11:50

Before he left he came over to say goodbye and “thanks for coming.” I stayed until 12:15 or so, walked over with curly to see how much had been collected. She thought more than last year. What do you think Red? He said yes, that’s more. Well, I made the right decision (to get the bigger loader).

I thanked them and told them I’d be in touch and left. I got a few plants at the neighboring plant sale (they were also packing up)

*Native Plant Exchange*

*2015, Second town*

The Spurge swap was held in the dirt parking lot at the south side of the county fairgrounds, away from main entrances. Two small signs at the entrance to the parking lot identified the location. This was the same place as held last year. The day was cool (upper 40s with intermittent showers and a bit of sun). The only way it was identifiable as the location were the garbage bags next to two white pickup trucks. One had the tailgate open. When I arrived the men were talking at the back of this truck.

It was the same site as last year, but it is not near other activities being held at the same time, such as the farmer's market. It's unknown whether the market people were informed so they could direct people. This was true last year, and the volunteer coordinator from the non-profit went over to notify the info booth at the market after some people commented on the obscure location. (Also picked up lunch.) Offices are closed and event locations are generally unstaffed and these other activities are separate from the collection, often being run by outside organization, such as auction houses, which would not help inform anyone who was looking for the swap. A couple individuals commented about the difficulty finding the swap. Two are noted.

Last year's swap was more slightly more high profile, with a table of information and plants arranged. One of the men was from the city the other from the county, both involved with weed control.

"We decided to go low key this year." the city guy said. "No sense in putting out a lot of material when it's just going to get rained on." A couple of the people were concerned about other weeds on their property, County rep had material in his truck which he would provide. It was a hefty spiral bound book with color photos and a page devoted to each weed. This seemed to provoke a surprise, possibly at the quality of the book, or at the size and therefore number of noxious weeds. *I realize I should investigate this. I didn't note the book exchanges, and can't remember who got books, the mcintosh lake gal, Native American couple or cheery are the only candidates and two of them got books.*

\*\*\*\*\*

Demolition couple, white in 60s, full size pick-up with business lettering on doors.

You guys are hard to find.

"It's always in the last place." JF asked where she had read about it. Probably the Times Call. He nodded.

JF When we send in the description of the location we always add more information.

he; Bought the house 10 years ago and the spurge was there. I can't tell you before that.

she: "I learned a couple years ago that [Second town] didn't like it, so I started pulling it. They come up every year, little ones." She held her hand up, fingers about 2 inches apart. "I just keep pulling every year."

He: said I should look up NextDoor.com, a neighbor to neighbor connecting tool. sign up and maybe put up my interest in spurge.

---

A SUV with a man in a hurry. late 30s.

He brought a white kitchen garbage bag open, and ¾ full

JF; thanks for pulling it,

Guy "oh, no problem. The wife did it all." When offered the free plants he indicated he wanted the purple ones, "The daughter will like that."

JF: All these are for you.

---

McIntosh lake gal late 30s

Brought 4 large black plastic garbage bags and said she started pulling last year, "Didn't make headway." I didn't read, I woke up in the middle of the night. I was all swollen she shook her head. "it was terrible. Blisters. I must have touched my eye."

I even had gloves on but, she showed her wrist and ran her finger up and down the inside of the forearm. "I got a rash above."

JF Wow, You must have worked hard.

"My husband helped me," she tilted her face down. "There's so much."

JF, "how did you find out?"

"I liked you guys (the city) on Facebook after the flood." "I saw it (myrtle spurge) and said, 'I have that.'"

---

First Town jay rd.

woman small SUV, with kids in the car.

"Nobody knows where you are." first comment. she had gone over to the farmer's market, but no one knew, so she drove around.

Brought a bag for the exchange. lives First Town, not in [Second town], “A friend that lives in [Second town] told us about this.”

She told us they have 7 acres and one zone with a clump of myrtle spurge.

“We have alpacas and we have pasture in the front, but in the back we had prairie dogs and then the plague came. You know they leave [the land] devastated. Now we have prairie dogs again, but we’d love to smother out the weeds and have pasture. Without chemicals. We understand that it can be a multiyear project.

She talked with S, county weed guy. he gave her his card and said he could come out. She also got a book. Then her friend stopped at the exchange. She had been driving by, but then there was also another car with spurge. Customers were coming pretty steadily after a lull around 10 - 10:30, which also had some rain.

.....

Cheery a woman in a station wagon.

She had four plastic buckets with spurge. After emptying them into a plastic bag with JF, she came to the truck to get the free plants.

As she came to me she leaned toward me and spontaneously said “I loved them.” I laughed.

She: They had such a pretty flower.

I nodded and added, yes and were so easy to grow.

She: I used to dig them up and put them in new places where I wanted them to grow. My husband said, ‘I don’t like those plants.’ Well, I do,” she said loudly. stamped her foot. “Now I have them everywhere.” She rolled her eyes and said. “I sprayed. We live in XXX but my heart is here (XXX). We’re not XXX. But they are coming back. Right up from the middle.

I called S over. That’s ok, he said, (about the spraying). “Some of them will come back. You can get them all.”

S: It’s OK to spray. Sometimes you have to spray. Farmers have to spray or they’d be out of business. I grew up on a farm, so that’s where I’m coming from. It’s OK.

She gave her a card. “Do you see any more around your neighborhood.”

She didn’t seem to think so, but then spoke to him privately.

There was a long discussion about the native plants and she got JFs card with the plant names. “I won’t remember. oh, kitties and fleas.” (plants are pussytoes and fleabane but she needed a shorter name).

.....

Native American couple full size truck, she did all the talking. He walked with limp.

She had gallon size baggie with a small amount of spurge. “This is all I could get to grow in two years. I found it growing along the St. Vrain. It’s so pretty. “

She described where she found it, near the river near the Home Depot. JF listened to that and took note.

“So if I go for walks along the greenway and see it I can pull it up? “

“Give us a call”, JF said, and handed her his card.

She got more plant advice about lemon balm/spearmint on her property. S took over. Another car drove up.

.....  
Lafayette family

“We got it from our kid’s school. We got it all.

“Sometimes we sneak into our old neighborhood and take it when nobody’s home.

JF What if somebody calls the police,

He: “Oh, we were ready for that.”

she “we keep educating people. It’s poisonous. I thought I got some on my hands. she grimaces and hunches her shoulders.

Keep up the education, JF says.

She Yes, we will. or maybe do some stealth pulling.

.....  
A woman in a small truck.

“I got a violation notice,” she called. She had two bags.

.....  
A station wagon with a older couple.

She got out. Last year I pulled 2 bags. I didn’t get here before the cutoff. She held up the baggie with spurge sprouts. “It worked.”

JF, laughs, gives plants.

.....  
A truck with a tall, muscular older man, retired park super.

2 extra large heavy duty garbage bags. He’s talking about where he got them, his neighbor, who is apparently suspicious of the government or regulations. He talks with weed agent, they know

many people in common. He's pulled it because it is getting close to his property. They talk for about ten minutes but others are pulling up.

.....

MTC gal.

She pulled from her property, and also began pulling from neighbors. Perhaps in parking strip?

While she was pulling "A guy came up and said 'Can I ask what you are doing?'"

MTC Yes, yes you can. You need to know about this too.

Happened in the city, so JF talks to her & gets the address. He will examine the area.

She's glad. MTC "That's great, because he was a big guy."

.....

the garbage truck is waiting to load the bags. I talk with MTCgal. We know each other from events.

After the truck leaves we are taking off and an older model full size truck drives up. It is full of black plastic garbage bags. The driver is an Asian woman.

We had 16 people she said with pride.

Our neighbor he said if we don't pull it he will spray. Oh no, we will pull and we did. she smiles broadly.

me: did you do it all today?

oh no, we worked all week.

The garbage truck has already gone, says JF

*she didn't get native plants, all the plants are gone*

Ok, I think I can help you. S makes a phone call. then, instructs her to follow him. They are going to drop it into garbage dumpster on fairgrounds.

S drives off. I wave to JF and we drive off. I stop and look at the dogs in humane society, and see the spurge signs still there, so I take them and will return.

*Native Plant Exchange*  
*Third Town, 2015*

This myrtle spurge plant swap was especially hard to find. Despite the invitation to “map it,” the result was a map of the city and the Open Space was not on the map. It was not easy to find on general search, so I eventually decided to go to a major road and drive east. My search did turn up the notice about last year’s weed walk, which turned out to be a very helpful bit of knowledge.

I arrived around 10 a.m., when I knew there was likely to be a lull. I was not sure about how many people would come, especially since this was the first year this town had held the event. As I drove along, I came to a small park, and a short distance after the Open Space. There was a small sign out front, and two white city trucks parked nose-in in the small parking lot. Two people were talking at the back of the truck and I could see in open truck bed a couple of flats of plants and some full large white plastic garbage bags.

I pulled in and parked along the side where there were about 4 parking spots. I didn’t recognize the two people, and went over pretty much empty handed to introduce myself. I told them immediately that I was studying the myrtle spurge eradication and they seemed open to talking with me. “If you don’t mind, I’ll hang out with you.” I talked about how I worked with the other locations and they were relaxed and seemed open to talking with me.

“I had a hard time finding this location.” I described my map search and the results.

CLE “I have a hard time describing the location, because the open space doesn’t have an address. Usually I try to put a cross street, but there’s no cross street here.”

I get it. But it seems that the city did not do a lot to create a successful event. MTC was the one who put up announcements and helped with publicity. (and that is what I first went to when I tried to find the place)

I say; I know some people got another location on Facebook.

CLE: I put it on the city’s page, but I don’t know how many people are getting it. I tried to see what it looked like, but I had to like the page, and that had to be approved. So I don’t know how many people are getting it. I’m not an expert on Facebook. I use it, but I talked to the new publicity person about fixing it.

The 3 bags had been brought by a woman who had received a “doorhanger.”

This particular woman had the spurge in her parking strip. This was the three full bags  
 “I had to ask (other officials) whose responsibility that was, you know. The homeowner is responsible for maintenance, so she had to deal with it. I felt sorry for her.”

CLE “I gave out 9 doorhangers and I hope to see them.”

We talk of the weather.

“It’s a great day to be outside,” CLE2 says. Also fishing, getting back to fishing, and cancelled events.

Me Were all the plants from doorhangers,

CLE no, a couple other people saw it and came in. Publicity was also in the Camera, the Colorado Daily and it was on the news.

The second city worker Eric. One of them spotted a coyote walking along the sidewalk across the street. It crossed over just west of us and headed for the prairie dog town.

CLE He doesn’t look so good. Mangy, she said. “Looking for lunch.”

So the talk turned to prairie dogs.

Me: “I’m not from Colorado, so I love prairie dogs.”

CLE She laughs, “I love them too. I’m not from Colorado. They’re cute. Eric doesn’t feel the same way.”

Me: Are you a native?

CLE2 “Not technically. I was born in Michigan but my parents moved here when I was a year and a half.”

Me “To us migrants you are a native,” I said.

CLE “I’ve been here since 2001.... I heard you can call yourself a native after 10 years. I should be a native, I’m not leaving.”

We listen. CLE2 says, “they’re on it.”

The prairie dogs are calling to each other. I’m sure this bark means “coyote.”

They got fewer calls last year about coyotes,

CLE “maybe people are getting used to them.” Some people hate them, and others think they are beautiful and like to watch them.”

I tell about the NYC coyote on the news.

CLE “They are really successful in urban environments.” she says.

Me I said they probably should keep them, because it would be good for the rat population.

CLE2 And garbage, and pets

CLE It’s sad to get those calls about missing cats, she says. I think, lady, that cat is not missing. I keep my cat indoors.”

Me “The birds are thanking you.”

??? “Cats are the deadliest predator. The other felines kill for food. Cats will kill to play with it.”

We watch for a while and CLE2 says he will leave to get his tasks done “so I can get out of here.”

Me “I’ll keep you company.” It’s 10:50.

CLE Thank you, she says.

Me I think not say I hope so.

She goes to talk to CLE2. I watch the hunt. The coyote is too itchy to hunt and trots over to a scrubby area, and starts rolling on the ground. CLE comes back to watch. About 10 minutes later, She spots the coyote trotting down the street again, going back in the direction that he had come from.

She had a degree in natural resource management from CSU. “I’m happy to be working in my field.”

We talk about the challenge of knocking on doors.

Me Do you ever get someone who’s resentful.

CLE No, I thought I would get a lot of calls, but I only got one, and she understood. She had children. “Once they find out how toxic it is.”

One problem CLE has is no city ordinance for myrtle spurge. The only city ordinance is for residents to manage all weeds over 6 inches high.

CLE I’ve decided I will go to council this year for an ordinance. I have to talk to code enforcement about the people (with doorhangers) who didn’t come. I don’t know if they will go out without a city ordinance. “What good is all this if we can’t enforce?” She looks at me for confirmation. “Of course there is the state law.”

Me Are you the weed manager?

CLE Yes

Me Did you do the weed walk last year?

CLE Yes, I’m doing one this year.

Me I want to come.

We figure out I need to be on her list for events and volunteering. I tell her I will send my email, and, if I can find it, a notice about a mix of seeds that will survive in a prairie dog town.

CLE had bought 100 native plants, 6 kinds, because there was a lot of publicity. But we were at the site without any participation until just before noon when a woman about 40 came up in an SUV. She opened up the slider door and she and CLE took out 2 extra-large black plastic leaf bags.

Lay: they were pretty and easy. “ I let them go (spread). I came because I got the citation, I mean the notice.”

Yes, but they are so toxic. They have that sap. CLE says. You can get a rash.

Lay I know the rash. She nods her head as if she is tired. I think she had the rash, but the fact that the plants are very easy is more important.

CLE “You can have four plants” and described the growing habit of each.

Lay Oh, pulsatilla. My son and I are pulsatills (homeopathic type). “He drives me crazy.”

She got 4 plants, and took 4 types. “I have to take the pulsatilla.” pussy toes, penstemon, and ?. “Will they spread?”

CLE Yes, they are natives and you really don’t have to water them.

This advice from the nursery is not the same as the advice given by others (water for the first year). I added a bit about watering more, “keeping an eye on them.” but she reiterated the advice from the nursery. This advice may result in less successful plantings. The nursery is noted for its native plant selection. I can tell my contact CLE is not a gardener,

The exchange is now over. I ask if I can help, but nothing is needed.

## APPENDIX

*Volunteer's "Spurge Pull" Field Notes*  
*5/13 MTC, spurge removal*

In the morning I arrived as ES was giving early remarks to the assembled volunteers. This looked like a good sized crowd, (I learned about 65 volunteers like myself, plus crew leaders and agency and county staff). We were there to spend a day pulling from private land myrtle spurge, a Class A noxious weed illegal to sell or grow in the state of Colorado.

ES: This was an historic occasion: the first time the county, volunteers had cooperated to pull weeds on private property. The goal is to eradicate the plant from this area.

The County Speaker: thanks thanks thanks. We think we can do this (eradicate the weed). The state has declared it illegal, beginning June 1 We have located this plant and homeowners are very happy to have you come on their property for this. Pulling now will help begin this eradication. It's the perfect time. thanks.

Chat with ES: The county has a program for public land and is successfully eradicating, Private land with this weed is important, Enforcement of the 2003 law is intended to step up beginning next week? or month. I say in OR, same classification, but not illegal, and gardeners really resent restriction (personal conversation with several, and plant sellers while a garden writer in OR, 2004-2010).

I volunteered to work with the group that has restrictions (one recent knee surgery PT male, weak ankles from group leader BW female) we are group one, as all other groups are selected by site and group leaders, we gain three more members at the end an 60ish married couple (name tags have first and last name CDm and LDf) and, one 30ish woman DP). We are to head out to flat ground.

BW, our group leader gives us details. The goal is to eradicate over a series of years. The plants must be pulled with at least 4 inches of roots. We are given prong tip tap root extractors, a spade and a trowel. We go to site in two cars. We get out and do reconnaissance, and I easily spot the weed patch. Retrieve tools and begin. BW scouts the far edges of the field. Uses binoculars. Returns to tell use that she found no satellite (outlying) plant communities.

Some of the roots are as big around as my wrist. These need the spade. The rest come out fairly easily without tools. This is because the ground is wet after weeks of late spring snows. The soft soil makes the work fast. We finish the site in 1.5 hrs.

Conversation snatches:

Toxicity: CD says "Be careful. What they say about toxicity is true. LD must have touched her nose when we pulled spurge in ?? and the next day had blisters."

education: BW has a masters in botany, former college teacher in Iowa. PT is PhD working with the govt (BLM?) doing research DP is a plant scientist working for the EPA in Denver, C&L are experienced weed control volunteers, with about 10 years of volunteering, did Dowdy Draw spurge pull and others. MTC committed. (Over-educated weed pullers jokes BW).

Repeated statements of gratitude about the weather of the past weeks. The soft wet soil. We got the plants early enough, no seeds. The cool day. These are unusual and related to our task, not the feelings of the snowy cold weather when we experienced it.

CD likes the shovel, and goes around to each big plant. There are many. "This is an old site." meaning the plants have been there for some time. PT scouts down the drainage along the road. I look down slope from the spurge patch. No satellite (outlying) plant communities are found. We clean up this area pretty quickly, about 1.5 hours. BW says now we do another pass over of the site to make sure we have gotten seedlings. (Name? not reconnaissance, but a quality control-type label.) Oh, look, I've found one, (various volunteers) That's why we have to do this QC, says BW.

The plants are piled at first then we scatter them root side up through the area. We sit along the side of the road, on drier ground and eat our bagged lunches. It is quiet. LD sees an unusual bird, Peewee nuthatch? The sun breaks through the clouds. I have a quiet conversation with PT, who shows me the "door-hanger" he carries on walks. It warns of the problems and illegal status of myrtle spurge, and he leaves this at homes where he sees the plant growing. He has traversed his neighborhood and informed others of the plant's status,

We talked about climate change (of course I introduced it) I say I think bec CO has such erratic weather these residents will be the last to recognize CC. BW says that story is the same in every part of the country. She mentions MA, Boston, and Iowa, "If you don't like the weather, wait 15 minutes.

There is no more conversation about the spurge, or its beauty. We pile into the cars and take off. In the middle of a conversation, I spot a cluster of myrtle spurge on a hillside along the road. BW turns the car around, asks the following car to wait and we turn around to confirm, The curves of the road make it difficult to spot on the return, but I think I see it again. BW makes a U-turn, and she sees it too. It is on private property. We take note of the location, and BW turns to me and notes "It's amazing once your eyes are accustomed to it you can easily spot anywhere [it is growing]." With that we continue to the next site in Four mile canyon.

A bit of search despite GPS (which BW continually praises for the confidence and peace of mind it has brought her.) We drive off the road and finally locate the right house down a dirt drive. I am overwhelmed at the site of a solid hillside of spurge. Solid on an 100% plus slope. I feel exhausted. No other crew is in sight, although we were supposed to be joining them. We begin pulling. It is easy, but the hillside is so fragile. The plants grow easily here, and the there are

many seedlings. No-one can work above us, as there are many rocks. I think it is a road cut for a fairly new house, but find out differently later.

The site abuts a creek. The sound of the creek is soothing. The work seems endless. It is noon, and we have 4 hours to go. The immensity of the task dampens the mood, but we pull. Suddenly another crew appears from above. They have been pulling there. The leader (L2) talks about why they went up.

The plant disperses its' seeds by propulsion, they can go 15 feet. she said. We figured we would start above. The group gathers to the other side of the drive on some rocks and eats. A chicken in the nearby coop begins clucking loudly. "You know what that is" says BW. The egg song? I say. She nods, she just laid her egg. PT joins conversation... I pull weeds. BW, PT and I talk about the native plants on the hillside. What could the homeowner plant. There is plum, hardy geranium, Oregon grape. grasses (no species named.)

The homeowner comes down the drive with kids in car. Pulls in then comes over to talk to us. Thank you thank you. I let BW talk with her, and keep on pulling.

Due to soft soil, dampness we are very fast. We get half the hillside done, but I need a break. I take a short break, snack and drink water (BW's suggestion for any discomfort) and go back to pulling. I don't last too long. Need a longer break. My left arm is faintly throbbing. I worry about being able to type my notes. PT is up on the fragile hill even with recent knee surgery. He never stops. DP and the Couple have gone up with the other crew. So only three of us pull all the weeds from this hillside.

While I am in pause, I take more photos. Two more crews arrive. Three small women. A carload of young men. BW talks to them, she knows all women and at least one man. After getting low down, they all go above. DP comes down for snack and break. Pulls spurge from downhill side after her snack.

Three boys emerge from the house carrying a plate of cookies. They are shy, but I ask the mom, who is coming out behind them if I can take photo. She agrees with a head nod. Plate of cookies go on a rock. The boys go back in, but she stays to talk, Thanks thanks thanks. the family pulled spurge in 2006, when they had rebuilt their home (been there since 1998) Was not so much then, but still woman felt it was dangerous. They took off all from the road cut where I was working and some above. Not all, she says.

After about 15-20 minutes I go back to it too. HO goes back inside. BW is now working steadily alongside us. (Leaders are not supposed to work as much as encourage workers and make them feel wanted. She didn't work so much earlier.) She also climbs hill, but also sits on hill above and pulls spurge below. I like going to the top and working down a strip. PT works up the strip. No one wants to work below another as rocks fall so easily. It could collapse.

No one above was seen for at least 45 minutes from group 3&4's arrival, then a line of people appears over the ridge. They are working down the hillside. Get a picture, says BW "This is pretty amazing."

We finish this hillside about 3:15. I stop. PT does the last bit of pulling with a shovel along the base. Too hard for me. When he's done, he goes up the hillside.

County guy (CG) drives up. Tall, articulate and goodlooking and ever so agreeable. Happy guy. He is so impressed or says so. "Wow." "so amazing. You got it all." takes photos of hillside workers.

Homeowner comes out with second plate of cookies. Thanks thanks thanks.

Yes of course. I hate it, says homeowner (HO). She gets the rash. It was too dangerous to pull above, didn't feel she needed to "risk her life." She now tells more re: last pull. "We pulled it in 2006." They "needed to pull in order to get certificate of occupancy from the county." CG: "you must have gotten the only inspector that cared about this."

There wasn't so much then, she says. The road used to be the old railroad, the bridge you drove over to get here is still the old railroad bridge. Now, HO getting rid of it is her "legal and moral obligation." We are so lucky to live here. It's such a privilege. Of course I want it gone.

CG Story of how seeds live 9 years. She will have to maintain eradication with continued work. "it is important. In the fall, the seeds can project 15 feet from the plant, with downhill it is even further, maybe 40 feet and then the wind." The water is right here. "If it gets in your bumper, you can drive anywhere it can pop out." He mentions Bettasso (preserve) or a roadside (all would be county responsibility. He tells the story twice in my hearing.)

CG gives advice to homeowner about next steps. (get in professionals who will spray do in fall and spring.) It will be less expensive now, I say. He says yes, and gives more specific reason, (coverage and pesticide amount). (He gives her card with his name and says to call for list of contractors.)

HO What should I do if I see it (elsewhere).

CG: Pull any satellite plants on home land, "It's very important." Tell county if on their land (which this place abuts). "If no seeds," I say. CG, Right that's right. HO Otherwise bag it, like dog poop. She scrunches her nose. The driveway is full of pulled spurge. What to do. BW suggests composting, I shake my head, "I don't think so," thinking of toxic chemicals. CG: Don't compost. "The best thing to do is bring it to the landfill." She nods, "OK, I can do that."

What else should I do, says HO.

Replant, I say. Yes, CG says, that more than anything will help. The natives will outcompete. He gives her more details.

(Earlier I had this replanting conversation with BW. She says the homeowners are given these options routinely. Told about new book with plant list, also free resources. I don't think this always happens. This homeowner didn't know, nor did Julie, my chiropractor whose home further up this canyon was partially completed during this weed pull.)

HO points to a clump of aspen, "They are new, it would be great if they spread there." Yes, CG is enthusiastic. "Can you imagine? That would be beautiful!"

The crews are still working down the steep hillside "Rock" called repeatedly. Most tumble erratically down the steep slope and at a distance from us. Only once do we dodge. they start tumbling toward the "drainage," a narrow gully with its own unique ecosystem.

More photos. and finally the crews come down. Job done. Group photos, hard to get everyone in photo. CG takes them. He is so happy and amiable. Commends groups, tells seed in bumper story again, encourages party at meeting site.

We all drive away. Homeowner will do cleanup.

At meeting site, food and beer, and soda are there. A porter for me and plenty of tasty food. A woman is setting out the taquitos she has cooked. "They have meat in them. I cooked them all day. My whole house smells like meat and I'm vegetarian." she tells a woman who asked ingredients.

I stand with BW, we start talking about the dance community that we both belong to. She is playing (piano in group) next week. The conversation turns when RV comes up. RV just had her 100<sup>th</sup> event last week. This is "#101" with MTC for her. She talks about loving beer, so does KV, a younger woman who has joined us. Left Hand Brewery, Women who love Ale (or something) monthly talks, pairings. I never knew, I said. You should come, she replies. BW also attends. Art exhibit. BW is a quilt and bottle cap artist, they talk about an exhibit in Lefthand. and artist talk. Then talk goes to DAM, then Boston art museum, specific artists. Quilting, I join in to see how to connect, got to senior center, quilt shop I am advised. I talk about the exhibit in [Second town] museum of abandoned sugar factory. no real pick up there.

ES stops by our small group of 4 women to touch base. He is a crowd worker, as founder of the org he is trying to connect people to the organization, as well as to the goal of eradicating spurge. He teases RV about doing more time with MTC during her upcoming vacation. She is already doing two days of vacation, leaving Estes Park and her mother and sisters, to do "Broomfield" and another project. A bit of an edge to her voice? not sure.

BW tells him about our sites. What was your team name, BW hesitates, says "Wooses" What was your team cheer? BW: "Rock!" The second site not "for the Wooses" He talks about slope, straight up is infinity, he says. It's length over rise. Ours slope was greater than 100 percent. he says.

How did homeowners participate? A letter was sent to all the property owners in several canyons (place names ) telling them of this opportunity to have volunteers come pull weeds. “MTC played a keyrole, “ ES says. “Many homeowners do not want the county on their land. They don’t trust the government, so MTC plays the role of a buffer.’ Oh, you have volunteers to help us. That’s OK.’ It’s a very important role.”

Then is time for ES speeches, thanks to volunteers, points some people out. Food team, Tool team. He estimates that we have picked over 100,000 plants today on 38 sites. He talks on, but with a small voice crowd begins chatting. Mostly “stick with us,” “we are successful,” “many more projects this year,” “join us.” “Check out website.” Membership woman comes next, commanding voice, she says we have 300 members. If we could get \$20 (membership) from 1800 of 3000 volunteers we could fund \$36,000 to underfunded projects like this one. (*That is a challenging call, asking for money from people who have given time.*) Two people ask for membership brochure. You can give online, she concludes.

Art conversation continues, post speeches. This is a compelling topic. BW talks of her own style, very exciting exhibits she has seen. Equipment she was inspired to buy due to seeing other artist works and styles.

Then we are joined by a woman (Trainer) who I recognize. Hi, I say. You were my trainer on seed collection last year,” I say. she says “You needed no training, You just took off.” I smile, turn to KV and encourage her to consider seed collector training, I say it’s only one day, and then they give your more training, nodding to my own trainer. Trainer brings up my education, I talk about that and teaching. BW was also college level teacher in Iowa, I say I wish it was more positive, and there was a base to come from. KV tells me she knows of minute 319, now water allocated to the Colorado River delta. first time in decades. been in works for decades, she says. I say this is great bec my class needs good news. Mostly I talk here, others listen, I try to hand conversation back. Nods of agreement about difficulty of climate/env news. I tell how students do come to MTC. Talk returns to contra dance. Post pull party is winding down, with fewer people around. As we (KV and I) try to exit new common interests keep us there. As we leave KV tells me she was part of the Sonoran Institute, which was part of negotiations to get water into CO delta. She lives in ‘First Town and works remotely now.

I say thank you, I will look up. I hope to see you soon.

*I wish I had cards to hand out for further interviews.*

*Volunteer "Spurge Pull"*

*5/14 Hillsides*

The day started for me at noon and planned to pull until 4. Others had met at 8 for instructions and carpooling to the site. I had other activities and knew I could not do a whole day pulling. I could barely do a half day.

The weather has been dry and the earth is dry too. the forecast for the day was upper 70s and sunny. As it turned out we had cloud cover until 3 p.m. which saved our small group.

I drove to the site and to the community center. There I found a HOA guy who knew one site where spurge was being pulled. He took me over to a large map of the community and showed the location. I drove there and it was a house overlooking a steep drop. As I parked I realized that the woman I saw was LP, the one who organized through the NPO. She seemed very glad to meet me, and I told her unexpected events had kept me from the early meetup which is partly true since I had to deal with unexpected family issues that morning.

She gave me gloves and introduced me to the crew leader NEON. Two other young men and a woman were in this crew. The spurge blanketed the areas next to this house. A continuous blanket on a very steep slope, greater than 45 degrees, more like 60 degrees. It looked as if it had never been dealt with, except as you tried to pull, it was apparent that it had been cut or whacked back earlier. This makes the job much more difficult. In addition, the site was very rocky, with small rock that made it almost impossible to dig the spurge roots. In situations like this, often the spurge comes out from the stem, leaving roots that will resprout.

LP introduces me to the crew, chatty, Neon, barista and frenchy. (What horrible names) there is very little conversation and I get a root digger and a trowel along with heavy duty black gloves. Barista is the quietest. Chatty is very vocal. Most of the conversation comes between two or three of the group.

People dig and then when a big plant comes out, there is a moment of sharing of the victory. (and it is an accomplishment. It's not the size of the plant that is removed, it is the length of the root.)

Chatty is working in the corner nearest the house near the top of the slope. She begins throwing all her spurge into a pile at the bottom of the slope, next to the air conditioner. (At one point she says, "These rich people. Have to have their air conditioning.")

There is a renter in the house. She comes out, silver blond, and asks us to keep an eye out for her patio pillows "They were blown away in the wind. I looked for them, but *shrugs shoulders*. If you see them you can put them on the porch." Pause. "And when you are done with that you can finish up in the house." Cleaning! It was joke, no one laughed and I said, "Oh, just leave the cleaning supplies out."

Later when she emerged to leave, we were sitting along the side of the road eating lunch. She drove up the drive and the opposite way down the street, turned and came back, stopping to say "I left the door open. Feel free to use the bathroom." Chatty "Do you want us to lock it after we go." "Just close the door. There haven't been many thefts up here... yet." She drove away.

Neon. "Scenic. A place where the renters drive Audis" She had a late model Audi sports car.

I "Oh, she's a renter. Well, I can't blame her then."

All residents have been notified about spurge, and that it must be removed. This house near the top of the slope in the deve. has been seeding spurge for a long time. What does the owner think?

*Volunteer "Spurge Pull"**May 2014*

This event was a mid-week pull and I was able to meet and stay with the group for 4 hours.

(meetings on campus and tutoring job required I miss the afternoon) The pull started with a breakfast spread, juices, a variety of cereal/fruits/breads/coffee and hot drinks. We also prepared a lunch for ourselves. The breads/cold cuts/spreads/condiments were spread out on a table and we were able to make our own sandwiches. These include gluten free and vegetarian options. The organization asks participants to submit meal restrictions before the event. This is only one of the ways that they take care of their volunteer force.

The group is split into several squads, I am assigned a group that is pulling spurge from a property that I had visited when recruiting homeowner/participants in Valley of Views. The home is on two family adjoining lots and the spurge is mostly in the rear of the property because the son-in-law of the original family has been managing the front of the properties. We begin there, and find a few isolated plants and a few patches. The group (5 women and one man) has a number of experienced volunteers and a variety of people offer directions, some conflicting. One woman takes off in a slightly different direction and scans the west side for spurge. the rest of us begin along the road and move up the slope and to the east looking for plants. Both properties are scanned and pulled in an hour.

One incident: Behind the house is a patch of established plants. They are under and behind a low hanging roof. The gutter is full of debris, which I pull out between spurge plants. I am working with a man, Peace Corp, who is playful and tells a joke and then touches my shoulder, in a "get it" kind of way. We are each pulling plants, but then cooperate when the roots are too deep. These are the display plants. They are the ones that we show to each other. Roots have to be long, or can be fully developed and at least 8 inches long. The tops of the plants can be rather large, about 18-24 inches in diameter when on the ground, but this is less important to the decision to display than the long root. Peace Corp and I are not showing these plants, we are out of sight of the other volunteers, although we can hear them. Our group leader comes to watch us, BW. She exclaims about the plants. Other come by too, but there are few remarks, and they continue to move up and across the property.

*The times that roots/plants are displayed are in the beginning, when the pull has just begun. The very first plants that qualify are held up proudly to the near members. Depending on the number of people, it seems to be about 5 displays. As the day goes on, few displays are made. These have to have some extra merit, like a very long root, or extremely large plant with multiple roots. These trophies may be displayed broadly. The very large plants generally are received with positive sounds, or remarks from the others. Occasionally these are photographed. (sometimes this is by staff, other times by volunteers. Photos are solicited from volunteers. The NPO organizing this pull uses photos at functions honoring volunteers and on its website.) The*

*volunteer takes a plant by the root or by the top, if it is smaller, and stands, smiling and proud. These stances can be by request of the photographer, but they seem to occur naturally from the individual being photo'ed. They are proud of their "catch." Getting a plant out by the root can be arduous.*

While we are in this area, the owner of the home comes out. She is elderly, but looks good and has lunch plans. She is Asian and repeatedly tells us how grateful she is for our being there. She wishes she could help us.

I can't help. I just had some surgery. My husband has passed away. My son-in-law helps me. I planted this in 1970. It's so pretty. I didn't know it could be bad.

It's pretty apparent that she couldn't do this work from the way she walks. She has to walk carefully on the path, teetering a bit. She does look better than when I interviewed her about a month earlier. She stays for about 10 minutes, often repeating her wish that she could help. She says the same thing so often that work begins to continue without any response to her comments. She goes back in the house.

This pull is taking place on a day that followed spring rains. the ground is moist, but not muddy. The slopes are about 45 degrees, with a few more level areas and a few more steep slopes. We move up the slope and a patch is discovered and the 4 women are working on it. Peace Corp joins them. I find another area with plants above them and work that. Talk is of other things.

BW makes a water call. This is another activity that the training encourages volunteer leaders to conduct intermittently. Drinking and staying hydrated is critical especially on hot sunny days. I have observed from 100 percent compliance to almost none for these hydration breaks. This does seem to be related to weather, rather than even hard sweaty work. We have a lot of shade on this property. On this pull, most stop and drink. (No water breaks included all people in one area.) BW is an experienced crew leader.

We take snack break and scout for the "big patch"

The son-in-law has come out to let us know where this patch is. "I've been working on this every year. I'm glad you are here. There is an infestation up the hill. (He points toward it, on the east edge of the upper part of their two lots.) I can't help, I have a doctor appointment."

He is very intense and seems very intent on getting us up the hill to this patch. He doesn't fully acknowledge the volunteer labor. He could have been giving the same directive to a crew he was paying.

The spurge is near a fallen tree. I find one tree and a widely scattered spurge patch. It is under an imposing outcrop of boulders. This is in dappled shade. Four working this patch, while below a duo has found what is likely the real patch the homeowner was concerned about.

This is a spot where spurge has been pulled before, a few of these plants have massive roots systems with weak top growth. This may have been by the homeowner (the property above).

We tackle the high patch because seed spread will infest the area below. The work is broken by a number of discoveries of native plants, which BW and another native plant admirer stop to photograph.

This is a place I would have to do my meditation. I tell the group. There isn't much response to this.

We are finishing up "Did you get this area," says BW, checking with volunteers. We each make our way down the hill toward the "infestation." We are trying to get the isolated plants. I find a few, but mostly we move downhill. "oh, this *is* an infestation."

The duo below has pulled one area to the east. The attention now moves to the area around the fallen tree. this area is located in full sun and the plant has conditions it likes best. The roots are harder to get because the ground is drier. We are using shovels, but mostly hand tools.

We work here briefly, and lunch is called. People keep pulling for a few more minutes. Once started, it is compelling to get the plants up. This seems to happen in two ways. One, removing the whole plant, as in this instance, volunteers keep pulling to maximize the number of plants pulled. the second way is the way that plants are removed, the root must be gotten. The advice is to get at least four inches of the plant. The big plants that only get an inch or two, volunteers will dig around the earth around the plant in order to get more of the root. Getting a long root in this way qualifies as a trophy as much as a whole plant with root. Volunteers mutter when this happens and you can see that they are frustrated and agitated until more of the root is removed.

We go to lunch and I let people know I want to do some interviews. One woman volunteers. she is from Ft. Collins and wants to do it by skype. I say yes.

At this point I leave the group. They are headed to the community center to use the bathrooms and have lunch.

## APPENDIX

### *Blogs*

learn2grow

<http://www.learn2grow.com/gardeningguides/perennials/featuredplants/MyrtleSpurge.aspx>

### **Myrtle Spurge: Handle (and Plant) With Care!**

Dr. Gerald Klingaman (retired extension horticulturist from the University of Arkansas)

Nobody's perfect, and the same is true of garden plants. Part of the fun in gardening is to grow as many varieties as you can to learn their secrets. A few, though, like myrtle spurge (or donkeytail spurge; *Euphorbia myrsinites*), harbor some secrets you really don't want to learn about firsthand – it's better to hear them before you plant!

The plant reseeds freely, but it's never really weedy in a garden situation. It just pops up here and there among other plants. For the most part, myrtle spurge really only lasts long-term in dry perches where it gets the drainage it needs.

That being said, there are at least four Western states – Colorado, Oregon, Washington and Utah – that list this plant as being a noxious weed that's escaped cultivation. That's the first big secret behind myrtle spurge, so be wary of planting it where it's proved problematic!

There's also another secret to myrtle spurge you need to know: Like many of its euphorbia relatives, this spurge's sap can cause extreme allergic reactions in some people (including me). Even though most people show little reaction to it (or if they do, they only develop a poison ivy-like rash), for sensitive individuals, contact can lead to anaphylactic shock!

Whether you're allergic or not, it's obviously not worth taking any risk, so always wear gloves when handling myrtle spurge, and wash your hands thoroughly afterward! I've now had three stressful encounters with Euphorbia sap, two resulting in emergency room visits. These were classic anaphylactic shock reactions which – trust me – are no fun, but compared with getting the sap in my eye, they were a cakewalk.

And yet, despite the sap risks, I still grow a number of euphorbias, including *Euphorbia myrsinites* – I'm just much more cautious when I work around them! As I said, using gloves when working around any of the ornamental spurges seems like a sensible precaution for all gardeners, even for those showing no indication of sensitivity.

So if you've got the courage and the right planting site, consider giving low-maintenance myrtle spurge a try. With just a bit of precaution, this easy-care perennial will add lots of color and texture to your garden – just be sure to handle it with care – and a good pair of gardening gloves!

Harlequin Gardens Blog

*Flowering Bullies*

Posted on August 29, 2014 by gardengirl

I'm going to warn you about some plants that are often bullies in the garden. These plants are dangerous because they flower and look pretty enough in the beginning, but just give them room and a little time and LOOK OUT!! Some of them can be valuable plants in harsh conditions where little else will survive or where they are isolated, but some are invasive in Nature, and some are such thugs that putting them in the garden is like inviting the Hell's Angels to your dinner party.

Euphorbia myrsinites, commonly known as Myrtle Spurge or Donkey Tail Spurge, has been classified as a noxious weed in Colorado because it has invaded Nature, but it is also one of the most pernicious garden bullies. The plant is quite attractive with its fleshy, bluish leaves forming spirals of foliage which can stand up or trail along the ground about 8" high. The tiny greenish flowers bloom in early spring and are eclipsed by showy yellowish bracts in umbrella-shaped clusters. And though it makes a tough, xeric, attractive plant, it spreads far too fast both by seed and by roots !!!

As if this were not bad enough, the white milky sap that oozes from broken or cut stems is quite toxic. One hot summer day I helped a gardener remove a whole patch of this plant. The man who was working with me must have wiped the sweat off his face and got some sap on it, because the next morning his eyes were so swollen, he couldn't see for half a day. Later, I warned a woman with a four-year-old about Donkey Tail Spurge that I saw in her garden. She told me she had just found out about it as her son and his entire pre-school class had to go to the hospital when they were playing "magic potion" with the milky sap. So if you are removing it, wear gloves and long sleeves and wash yourself and your clothes immediately afterwards. Because of this toxicity and because Myrtle Spurge is moving rapidly into our wild areas, this plant should be regarded as Noxious Plant #1. Remove any you have and encourage your friends and neighbors to do the same; it may take several years to succeed.

*The article goes on to describe 6 more "bullies," and lists of many more.*

*It's unclear who wrote this. Posted under Mikl's articles, by garden girl. Link doesn't identify writer.*

## GLOSSARY OF SELECTED TERMS

### *Native, Invasive, and Other Plant-Related Definitions*

United States Department of Agriculture, Connecticut Office: Retrieved ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ct/technical/ecoscience/invasive/?cid=nrcs142p2\\_011124](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ct/technical/ecoscience/invasive/?cid=nrcs142p2_011124)).

#### **Native Plant**

A plant that is a part of the balance of nature that has developed over hundreds or thousands of years in a particular region or ecosystem. Note: The word native should always be used with a geographic qualifier (that is, native to New England [for example]). Only plants found in this country before European settlement are considered to be native to the United States.

#### **Invasive Plant**

A plant that is both non-native and able to establish on many sites, grow quickly, and spread to the point of disrupting plant communities or ecosystems. Note: From the Presidential Executive Order 13112 (February 1999): 'An invasive species is defined as a species that is 1) non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health.' In contrast to item 2) of the Executive Order, which includes plants invasive in agricultural settings, the Connecticut Invasive Plant Working Group lists non-native plants as invasive only if they invade minimally managed (natural) areas.

#### **Non-Native Plant**

A plant introduced with human help (intentionally or accidentally) to a new place or new type of habitat where it was not previously found. Note: Not all non-native plants are invasive. In fact, when many non-native plants are introduced to new places, they cannot reproduce or spread readily without continued human help (for example, many ornamental plants).

#### **Naturalized Plant**

A non-native plant that does not need human help to reproduce and maintain itself over time in an area where it is not native. Notes: Even though their offspring reproduce and spread naturally (without human help), naturalized plants do not, over time, become native members of the local plant community. Many naturalized plants are found primarily near human-dominated areas; and, sometimes, naturalized is used (confusingly) to refer specifically to naturally reproducing, non-native plants that do not invade areas dominated by native vegetation. However, since invasive plants also reproduce and spread without human help, they also are naturalized – invasives are a small, but troublesome, sub-category of naturalized plants.

#### **Exotic Plant**

A plant not native to the continent on which it is now found. (Plants from Europe are exotic in North America; plants from North America are exotic in Japan.)

**Translocated Plant**

A plant not native to the portion of the continent where it is now found. (California Poppies in New England are an example of a translocated species.)

**Opportunistic Native Plant**

A native plant that is able to take advantage of disturbance to the soil or existing vegetation to spread quickly and out-compete the other plants on the disturbed site.

**Weed**

Common Usage - A weed is a plant (native or non-native) that is not valued in the place where it is growing (USDA Animal and Plant Health Inspection Service (APHIS)). Definition - Any plant that poses a major threat to agriculture and/or natural ecosystems within the United States.

**Noxious Weed**

Common Usage - A plant that is particularly troublesome. Legal Context (Federal Plant Protection Act) - Any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment.