

# “When, Where, Why, and How OSMP Removes Trees.”

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## **“Why are they cutting down those trees? Isn’t this Open Space?”**

Understandably, visitors to Boulder’s Open Space, and those living adjacent to OSMP properties are sensitive to removal of any trees that may provide shade, aesthetics, and screening in the urban environment. In the natural environment it may seem that trees are supposed to be there. But that is not necessarily so. In the past, OSMP staff has made significant attempts to provide advance notification to adjacent residents and landowners of the need to remove or trim trees.

OSMP removes or trims trees on Open Space lands for three general reasons:

- 1. Removal of Invasive and Non-native Species**
- 2. Visitor Safety and to Prevent Property Damage**
- 3. Fire Mitigation and Forest Health**

## *Removal of Invasive and Non-native Species.*

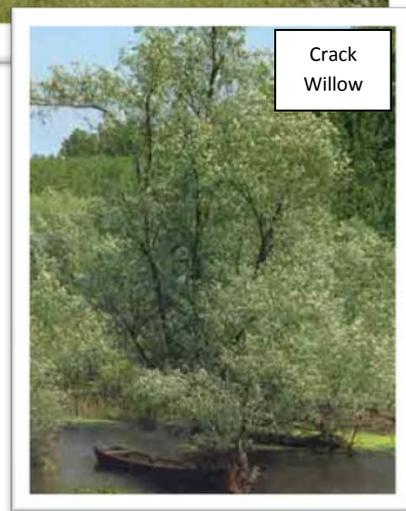
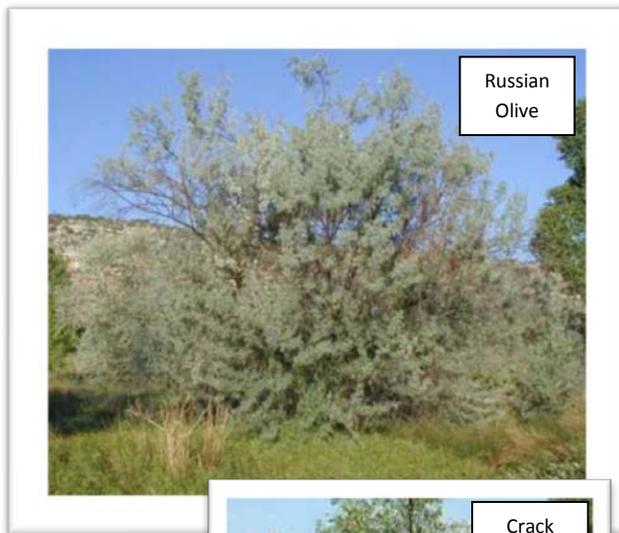
### **Background and Purpose**

In a broad sense, removal of invasive and non-native trees is an important part of OSMP management and stewardship of natural communities. These types of tree removals have already been evaluated and commented on by the public through various management plans such as the Grassland Ecosystem Management Plan (GEMP), and the Forest Ecosystem Management Plan (FEMP). It’s a recognition that not all trees are equal in value, both aesthetic and ecological. Further, ongoing and continuous removal of exotic and invasive species of trees on OSMP properties is a charter purpose, in so much as maintaining the ecological integrity of natural systems is the concern. For example, in the absence of a natural fire regime a native grassland community can become “invaded” by woody species of shrubs and trees. Maintaining the ecological integrity of a grassland community can sometimes require that the woody species are removed (Chapman et al. 2004, Coppedge et al. 2001, Grant et al. 2004).

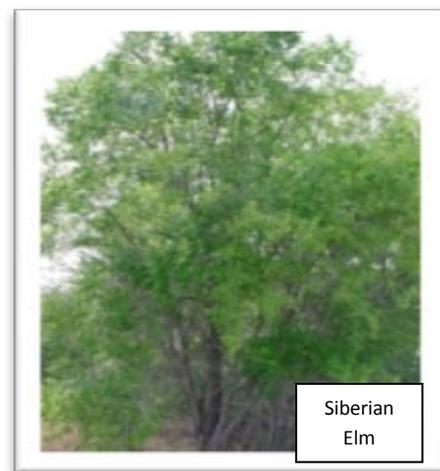
And in the case of Russian olive, a legal mandate makes it difficult to engage in an extensive and time-consuming “public process” each time a tree is removed. Russian olives, for example, are designated as a “List B” species in the Colorado Noxious Weed Act (NISIC) which requires eradication, containment, or suppression of local infestations. This document provides the rationale for removal of certain types and species of trees on OSMP lands and describes the circumstances under which a unique public notification and engagement process would, or would not be needed.

## Invasive Tree Species

**Russian-Olive** (*Elaeagnus angustifolia* L.) is a native of Southeastern Europe and Western Asia. Russian-olive is a small to medium-sized, usually thorny tree that can grow to 30 feet in height. Its stems, buds, and leaves have a dense covering of silvery to rusty scales. At three years of age, plants begin to flower and fruit. Abundant silvery fruits can provide forage for some wildlife. But the tree's branching structure provides little nesting substrate or cavities for birds (Knopf 1986). Russian-olive is an ecological threat to natural habitats and systems because it can outcompete native vegetation, interfere with natural plant succession and nutrient cycling, and tax water reserves. Because Russian olive is capable of fixing nitrogen in its roots, it can grow on bare, mineral substrates and dominate riparian vegetation where overstory cottonwoods have died (Knopf 1986). Although Russian-olive provides a plentiful source of edible fruits for birds, ecologists have found that bird species richness is actually higher in riparian areas dominated by native vegetation. That is because this small tree species does not provide the habitat structure or nesting opportunities that are available in habitats dominated by native tree species or even grasslands themselves. Russian olives are designated as a "List B" species in the Colorado Noxious Weed Act. This act requires agencies such as OSMP to eradicate, contain, or suppress local infestations ( See: CRS 35-5.5-101 to 119). Since 2006 Boulder County Parks and Open Space has removed 15,000 Russian olives from riparian corridors and other habitats, accomplishing their goal to remove 95% of the Russian olives on their properties by 2012. Russian olives were specifically identified in OSMP's GEMP as being a target for removal that was thoroughly vetted in a public review process. Understandably, this was at a much broader context and scale than a single tree, or even a stand of trees.



**Crack Willow** (*Salix fragilis*) is a species of willow native to Europe and western Asia, usually growing beside rivers. Willows can form dense thickets several meters thick, with densely spaced stems that could be major impediments to access waterways. Crack willow is a thicket-forming species that have extensive roots, which can grow out into the stream, trapping silt and creating a mat of root layers that often block streams, drains and culverts. They are a major impediment to access waterways. It is called crack willow because it is highly susceptible to wind, ice and snow damage. It has escaped cultivation and can form pure stands. Willows can spread easily from detached twigs floating downstream.



**Siberian Elm** (*Ulmus pumila*), a native of Eastern Asia, is the weed of the elm family. While most elm species are good hearty trees, Siberian Elm is a problem in the urban forest. Siberian Elm are prone to having

weak wood, slime flow from bacteria, poorly attached branches, and producing amazing amounts of seeds. In many areas, Siberian Elm has become an invasive species and a noxious weed. Most people do not plant Siberian Elm; they are very talented at planting themselves. Even on the poorest sites. The tree can invade and dominate disturbed prairies in just a few years. Seed germination rate is high and seedlings establish quickly in sparsely vegetated areas.

**Green Ash** (*Fraxinus pennsylvanica*), is native to the eastern United States and grows vigorously when established, dominating native tree species and altering native understory vegetation. It is often planted in the urban environment along city streets because of its rapid growth, shading, and colorful foliage.



### **Control Methods**

For all of the above species without control, trees spread vegetatively or by fruit-seed and aggressively out-compete most other native species. Control is usually accomplished by cutting and painting the remaining stumps with a herbicidal application to prevent resprouting. The herbicide will usually kill the root system and speed decomposition of the below-ground portions of the plant.

### **Management - Eradication, Control, Containment**

Colorado's Noxious Weed Act (CRS 35-5.5, NISIC) establishes a noxious weed list with prioritized management goals for the weeds on the A, B and C Lists. Each noxious weed is required to be eradicated, contained or controlled.

Eradication - The elimination of all plant parts within the current growing season. When populations of noxious weeds that are not normally found in Colorado, or are only found in small areas, are discovered, they are required to be eradicated. By eliminating a noxious weed when its population is small, you save time, money, and much effort in the long run.

Control - If a noxious weed is found in substantial numbers in some parts of the state but not others, a "line in the sand" will be drawn to establish management areas. It may be feasible to eradicate small outlier populations however, in areas of higher density; the management goal may be suppression.

Containment - Some weeds are found in such large numbers that it is no longer realistic to think we will be able to rid the entire state of their presence. Instead we will aim to stop their spread.

### **Woody Species Invasion of Grassland Habitat**

Trees and other woody plants threaten grassland obligate wildlife, as well as the biological integrity of grasslands. Bird species associated with grasslands in North America have declined in abundance, whereas species associated with shrub and non-native woodlands have increased. Prehistoric conditions that maintained native grassland habitat included periodic fire and flooding along waterways. The absence of these disturbances coupled with the importation of non-native species that can take advantage of current or existing conditions and altered hydrology provide conditions for grasslands and riparian corridors to become invaded by woody species that replace habitats required by native grasslands and associated wildlife.

## *Visitor Safety and to Prevent Property Damage*

OSMP trailheads and parking areas provide access to over 150 miles of recreational trails. At times, OSMP staff identifies trees that are in imminent danger of falling either on trails (and potentially those visitors using the trail) or on property such as fences, trailhead features, or on adjacent private property. At such times, OSMP staff will remove these trees before they fall.

### **Woody Species and Irrigation Ditches**

OSMP has an ownership interest in 35 incorporated ditch and lateral companies that serve department properties through over 250 irrigation laterals. Management and control of woody vegetation along irrigation ditch and lateral rights-of-way are an important component of maintaining the City's water rights portfolio. Colorado law (CRS Section 38-23-101) requires water right owners to maintain ditch embankments. Tree collapse and piping from decaying roots are a major potential cause of property damage. Ongoing maintenance and control of woody species is necessary to maintain water deliveries, preserve rights-of-way, protect water rights, and reduce the likelihood of property damage to private landowners from City owned irrigation facilities.

### **Current OSMP Management Practices**

Limited by budget and manpower, OSMP uses available resources and volunteer efforts to control invasive trees throughout the land system by cutting and removal. Sometimes limbs and branches are put into a "chipper" on site where the chips may be left on site, or removed for disposal or compost.

Russian olive and other tree and shrub species that are changing the integrity of OSMP riparian, wetland, and grassland communities are a large focus of the Integrated Pest Management (IPM) and Restoration programs. In 2011, 17 sites are scheduled for tree/shrub removal projects (See attached map at the end of this document). Large scale projects are labeled on the map and are described below.

Fancher: 2011 WORK COMPLETED. The Fancher Project entails reclaiming former gravel pits to wetland habitat and removing invasive tree/shrub species to improve wetland, grassland, and riparian habitat along South Boulder Creek. In addition, removal of invasive trees in the area will improve conditions for the Northern Leopard Frog which requires more open wetlands for breeding and dispersal.

Boulder Creek Riparian Restoration: 2011 WORK COMPLETED The Boulder Creek Riparian restoration project is a continuation of work started in 2010 to remove non-native tree/shrub species and plant native tree/shrub species indicative of riparian systems in the Boulder area.

South Boulder Creek Riparian: 2011 WORK COMPLETED. The South Boulder Creek Riparian restoration project (Baseline to South Boulder Road) is a continuation of work started in 2009 to transition this largely non-native riparian community to a native riparian community.

Sombrero Marsh: SCHEDULED FOR SEPTEMBER 2011. This is a routine Russian olive removal project to clear Russian olive from ditch banks and remove a large grove adjacent to a neighborhood. This project is undergoing a public process prior to work being completed.

Weiser: SCHEDULED FOR SEPTEMBER AND OCTOBER 2011. This project starts multiple years of Russian olive removal on a new OSMP property with nearly 50 acres of Russian olive trees.

Miscellaneous sites: SOME WORK COMPLETED, MOST SCHEDULED FOR SEPTEMBER THROUGH EARLY NOVEMBER 2011. These sites are the other 12 unlabeled sites on Figure 1. They generally encompass grassland and riparian habitats where Russian olive is small which makes the work more cost effective.

### *Fire Mitigation and Forest Health*

OSMP, along with its partners in City of Boulder Fire, Boulder County Parks and Open Space, Colorado State Forest Service, and the US Forest Service, actively manage forests to improve forest health, treat hazardous fuels and prevent the spread of mountain pine beetle. This is done with a combination of thinning trees and prescribed fires. Forest thinning projects take into account the current forest structure and the natural forest conditions that would have been found historically before natural fires were actively suppressed. Thinning of forests, especially those adjacent to the City makes them more adaptable to fire and reduces the threat of a catastrophic wildfire. It makes the remaining forests more resistant to insects, and promotes understory vegetation that provides benefits to wildlife. Visitors to OSMP lands, especially those in the mountain backdrop, will notice forest crews cutting and removing trees and slash. OSMP makes every effort to minimize the impacts of forest management and within a growing season or two most of the impacts disappear.



### **Public Notice**

Where trees are adjacent to residential neighborhoods, OSMP will notify residents in the area at least one month prior to the proposed removal, determine if, and which residential dwellings are within line of sight of the affected area. If tree removal is required by statute (such as Russian olive) or if there is an immediate need for removal due to safety or threat to property or infrastructure removal will proceed. If the trees are small (seedlings or saplings), they may be removed without public notification. If the trees are large, or determined by staff to have an aesthetic or similar value, then public notification, which may entail a formal meeting with the affected residents, would be arranged prior to tree removal.

### **References**

Chapman, R.N.; D.M. Engle, R.E. Masters and D.M. Leslie Jr. 2004 Tree invasion constrains the influence of herbaceous structure in grassland bird habitats from iastate.edu – *Ecoscience* 11(1): 55-63

National Invasive Species Information Center (NISIC)

<http://www.invasivespeciesinfo.gov/laws/co.shtml> USDA National Agricultural Library

Coppedge, B.R.; D.M. Engle, R.E. Masters and M.S. Gregory 2001 Avian response to landscape change in fragmented Great Plains Grasslands. *Ecological Applications* 11:47-59.

Grant T.A., E. Madden, and G.B. Berkey 2004 Tree and shrub invasion in northern mixed-grass prairie: implications for breeding grassland birds *Wildlife Society Bulletin* 32(3):807-818. 2004 [http://www.bioone.org/doi/abs/10.2193/0091-7648\(2004\)032%5B0807:TASIIN%5D2.0.CO%3B2 - n101](http://www.bioone.org/doi/abs/10.2193/0091-7648(2004)032%5B0807:TASIIN%5D2.0.CO%3B2 - n101)

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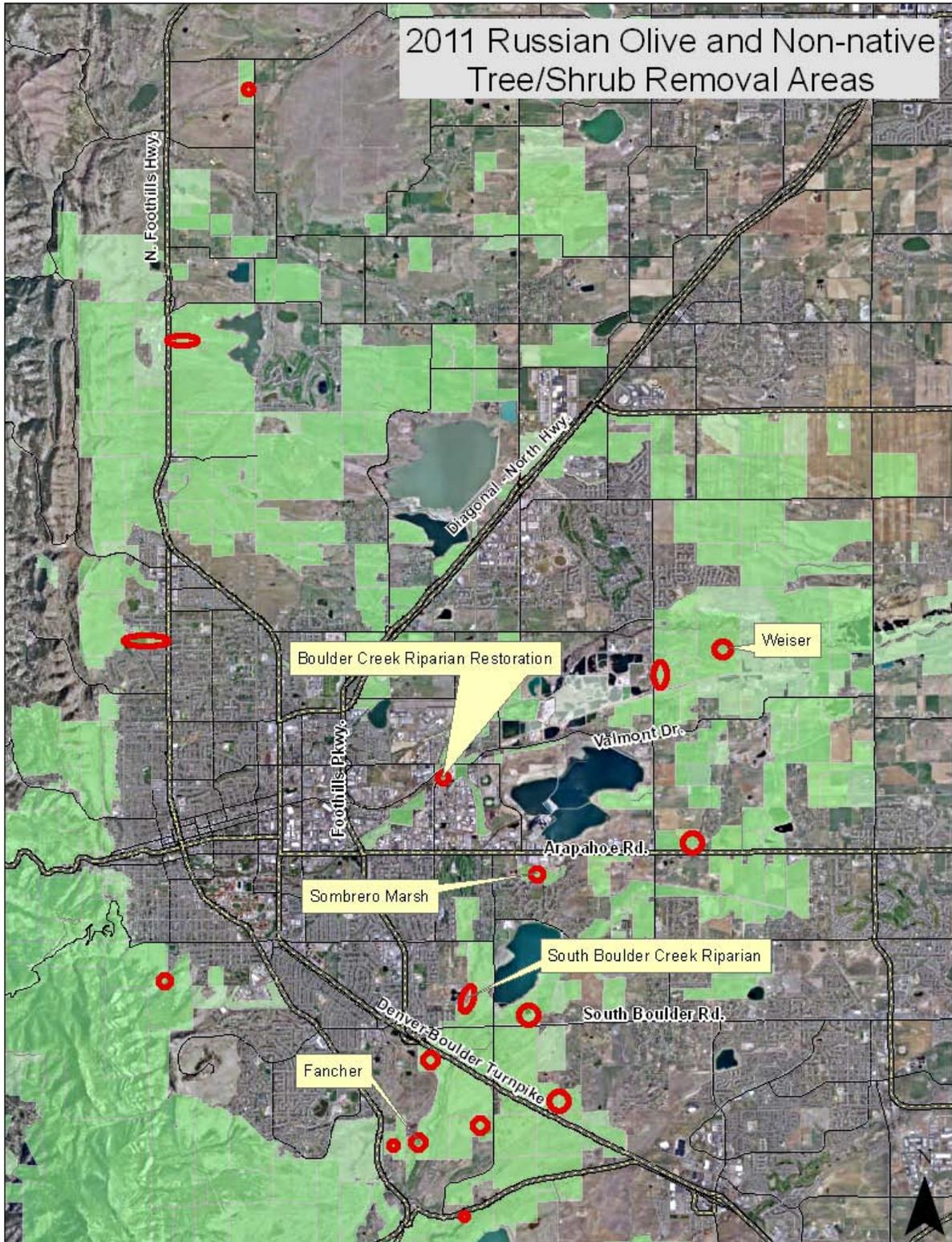


Figure 1. Location of Russian olive and other tree/shrub removal projects in 2011