

**Recreation sites**, both developed and dispersed, are the hub of several means of invasive plant spread. Recreation sites bring together people and their recreation equipment, vehicles, pack stock and pets where roads, trails, and waterways converge. Invasive plants can be easily transported from one site to other areas on the District and beyond. (See Map 2-2A, *Routes of Invasive Plant Spread: Recreation Sites and Waterways*.)

**Timber harvest, restoration, prescribed fire, and silviculture activities** disturb vegetation and soil in ways that can stimulate existing invasive plant seed banks, reduce barriers to invasive seed dispersal, and improve site conditions for invasive plant establishment and growth. Particularly where project disturbances are more severe, such as skid roads and burn pile scars, invasive plant infestations can persist and become sources for further seed spread. Equipment and work crews can also spread invasive plant seeds to and from project areas.

**Mineral material sites** such as quarries and mining operation sites are continuously disturbed and may have numerous users. Vegetation and top soil are removed during mining activities, and revegetation efforts may need several successional phases in order to reclaim the site. During these phases, the site may be vulnerable to establishment by invasive plants. (See Map 2-2D, *Routes of Invasive Plant Spread: Material Sites and Mineral Resources*.)

**Wildfires** create disturbances and remove shade and native vegetation, creating opportunities for invasive plants to establish before native vegetation has a chance to regrow. High intensity wildfire can destroy organic soil horizons that are conducive to native plant establishment and propagation. Without these substrates, invasive plants can gain a foothold. Invasive plants may also increase hazardous fuels in ways that increase fire intensity or frequency in ecosystems (Brooks et al. 2004).

## Category IV: New Invaders

Species of invasive plants not previously documented on the District may be found at any time. Initial infestations are small, but may become large before being discovered. Common routes of spread (e.g., roads and waterways) are checked regularly. Species of concern not yet documented on the District but documented on adjacent lands include perennial pepperweed (*Lepidium latifolium*), plumeless thistles (*Carduus acanthoides*, *C. crispus*, and *C. tenuiflorus*), and myrtle spurge (*Euphorbia myrsinites*) (see Table 2-4, *Invasive Plants Documented on Neighboring Lands but Not Known to Occur on the District*). For example, perennial pepperweed is present around the shore of Emigrant Lake on adjacent public and private lands, but has yet to be detected on BLM-managed lands. The District works with numerous entities to coordinate early detection activities across jurisdictional boundaries and educate the public about new invasive plants that are invading the area. All new invaders are a high priority for treatment in order to prevent them from becoming established on the District (see further information in the *Prioritizing Areas for Treatment* section later in this Chapter).

**Table 2-4. Invasive Plants Documented on Neighboring Lands but Not Known to Occur on the District**

| Family                | Scientific Name                                   | Common Name              | Duration  | ODA Status <sup>1</sup> | Treatment Group <sup>2</sup> |
|-----------------------|---------------------------------------------------|--------------------------|-----------|-------------------------|------------------------------|
| <i>Dicots</i>         |                                                   |                          |           |                         |                              |
| Apocynaceae (dogbane) | <i>Nerium oleander</i>                            | oleander                 | Perennial | NL                      | D9                           |
| Aquifoliaceae (holly) | <i>Ilex aquifolium</i>                            | English holly            | Perennial | NL                      | D12                          |
| Asteraceae (aster)    | <i>Carduus acanthoides</i>                        | spiny plumeless thistle  | Biennial  | A list                  | D4                           |
|                       | <i>Carduus crispus</i>                            | curly plumeless thistle  | Biennial  | A list                  | D4                           |
|                       | <i>Carduus pycnocephalus</i> ssp. <i>cinereus</i> | Turkish thistle          | Annual    | B list                  | D2                           |
|                       | <i>Carduus tenuiflorus</i>                        | winged plumeless thistle | Annual    | B list                  | D2                           |
|                       | <i>Centaurea iberica</i>                          | Iberian starthistle      | Perennial | A list                  | D4                           |
|                       | <i>Hieracium aurantiacum</i>                      | orange hawkweed          | Perennial | A list                  | D4                           |
|                       | <i>Onopordum tauricum</i>                         | bull cottonthistle       | Biennial  | A list                  | D4                           |
|                       | <i>Tussilago farfara</i>                          | coltsfoot                | Perennial | A list                  | D4                           |

| Family                         | Scientific Name                                   | Common Name                  | Duration  | ODA Status <sup>1</sup> | Treatment Group <sup>2</sup> |
|--------------------------------|---------------------------------------------------|------------------------------|-----------|-------------------------|------------------------------|
| Balsaminaceae (touch-me-not)   | <i>Impatiens glandulifera</i>                     | ornamental jewelweed         | Annual    | B list                  | D1                           |
| Boraginaceae (borage)          | <i>Anchusa azurea</i>                             | Italian bugloss              | Perennial | NL                      | D5                           |
|                                | <i>Echium plantagineum</i>                        | salvation jane               | Biennial  | A list                  | D5                           |
| Brassicaceae (mustard)         | <i>Lepidium latifolium</i>                        | perennial pepperweed         | Perennial | B list                  | D6                           |
|                                | <i>Lunaria annua</i>                              | annual honesty               | Biennial  | NL                      | D6                           |
| Buddlejaceae (butterfly bush)  | <i>Buddleja davidii</i>                           | orange eye butterflybush     | Perennial | B list                  | D12                          |
| Cuscutaceae (dodder)           | <i>Cuscuta</i> spp.                               | dodder                       | Perennial | B list                  | D9                           |
| Euphorbiaceae (spurge)         | <i>Euphorbia lathyris</i>                         | caper spurge                 | Annual    | NL                      | D1                           |
|                                | <i>Euphorbia myrsinites</i>                       | myrtle spurge                | Perennial | B list                  | D9                           |
| Fabaceae (pea)                 | <i>Galega officinalis</i>                         | goatsrue                     | Perennial | A list                  | D7                           |
| Lamiaceae (mint)               | <i>Salvia aethiopis</i>                           | Mediterranean sage           | Biennial  | B list                  | D9                           |
|                                | <i>Salvia sclarea</i>                             | clary sage                   | Biennial  | NL                      | D9                           |
| Lythraceae (loosestrife)       | <i>Lythrum hyssopifolium</i>                      | hyssop loosestrife           | Biennial  | NL                      | D9                           |
|                                | <i>Lythrum tribracteatum</i>                      | threebract loosestrife       | Biennial  | NL                      | D9                           |
| Malvaceae (mallow)             | <i>Abutilon theophrasti</i>                       | velvet-leaf                  | Annual    | B list                  | D1                           |
| Menyanthaceae (buckbean)       | <i>Nymphoides peltata</i>                         | yellow floatingheart         | Perennial | A list                  | A-ALT                        |
| Oleaceae (olive)               | <i>Ligustrum vulgare</i>                          | European privet              | Perennial | NL                      | D12                          |
| Onagraceae (evening primrose)  | <i>Ludwigia grandiflora</i>                       | large-flower primrose willow | Perennial | B list                  | A-ALT                        |
| Orobanchaceae (broomrape)      | <i>Orobanche minor</i>                            | clover broomrape             | Annual    | B list                  | D1                           |
| Polygonaceae (buckwheat)       | <i>Polygonum polystachyum</i>                     | cultivated knotweed          | Perennial | B list                  | D11                          |
|                                | <i>Polygonum bohemicum</i>                        | Bohemian knotweed            | Perennial | NL                      | D11                          |
| Primulaceae (primrose)         | <i>Lysimachia nummularia</i>                      | creeping Jenny               | Perennial | NL                      | D9                           |
|                                | <i>Lysimachia punctata</i>                        | large yellow loosestrife     | Perennial | NL                      | D9                           |
|                                | <i>Lysimachia vulgarism</i>                       | garden yellow loosestrife    | Perennial | A list                  | D9                           |
| Ranunculaceae (buttercup)      | <i>Ficaria verna</i>                              | fig buttercup                | Perennial | NL                      | D9                           |
| Rosaceae (rose)                | <i>Cotoneaster</i> spp.                           | Cotoneaster                  | Perennial | NL                      | D12                          |
|                                | <i>Crataegus monogyna</i> et al.                  | hawthorns                    | Perennial | NL                      | D12                          |
|                                | <i>Prunus avium</i> et al.                        | ornamental cherries          | Perennial | NL                      | D12                          |
|                                | <i>Pyracantha coccinea</i> , <i>P. fortuneana</i> | firethorns                   | Perennial | NL                      | D12                          |
|                                | <i>Pyrus calleryana</i>                           | Callery pear                 | Perennial | NL                      | D12                          |
| Solanaceae (nightshade)        | <i>Solanum aviculare</i>                          | New Zealand nightshade       | Perennial | NL                      | D9                           |
|                                | <i>Solanum rostratum</i>                          | buffalobur                   | Annual    | B list                  | D2                           |
| Tamaricaceae (tamarisk)        | <i>Tamarix ramosissima</i>                        | saltcedar                    | Perennial | B list                  | D12                          |
| <b>Monocots</b>                |                                                   |                              |           |                         |                              |
| Araceae (arum)                 | <i>Arum italicum</i>                              | Italian lords and ladies     | Perennial | NL                      | M2                           |
| Cyperaceae (sedge)             | <i>Isolepis setacea</i>                           | bristleleaf bulrush          | Perennial | NL                      | A                            |
| Hydrocharitaceae (frogbit)     | <i>Egeria densa</i>                               | South American waterweed     | Perennial | B list                  | A-ALT                        |
| Poaceae (grass)                | <i>Arundo donax</i>                               | giant reed                   | Perennial | NL                      | M2                           |
|                                | <i>Bambusoideae</i> spp.                          | bamboo                       | Perennial | NL                      | M2                           |
|                                | <i>Cortaderia jubata</i> , <i>C. selloana</i>     | pampas grasses               | Perennial | B list                  | M2                           |
|                                | <i>Nardus stricta</i>                             | matgrass                     | Perennial | A list                  | M2                           |
|                                | <i>Saccharum ravennae</i>                         | ravennagrass                 | Perennial | A list                  | M2                           |
|                                | <i>Setaria faberi</i>                             | Japanese bristlegrass        | Annual    | NL                      | M1                           |
| Pontederiaceae (pickerel-weed) | <i>Eichhornia crassipes</i>                       | water hyacinth               | Perennial | NL                      | M2                           |

1. Noxious weeds are classified by the ODA for the purpose of prioritizing and implementing noxious weed control projects (ODA 2017):