

<b>Mechanism</b>	<b>Description</b>	<b>Typical Application</b>	<b>Disturbance Rating*</b>
Moldboard Plow	Several large blades independently spring loaded.	Controls most grasses, forbs, and small non-sprouting shrubs. Works well on dry rocky soils. Restricted from soils with large rocks and over 30 percent slope.	1S
Disk Plow	single row of a few to several disk	Turns over vegetation and prepares seedbed, controls deep rooted plants, restricted to deep rock-free soils.	1S
Brushland Plow	several pairs of opposite disk on spring loaded arms	Wildland/ brushland application in rocky, rough, and uneven terrain, kills low growing shrubs.	1S
Dozer/Cat	Pushed blade scraping	Scrapes surface vegetation to mineral soil, applications include construction of fire line; fuel breaks, etc.	1S
Off-set disk	Two rows of disk at an angle to each other.	Controls most grasses, forbs, and small non-sprouting shrubs. Works well on dry rocky soils. Restricted from soils with large rocks and over 30 percent slope.	1S
Root Plow	strait or V-shaped blade attached to shanks and towed	Undercuts grasses, forbs, shrubs, and small trees- kill of sprouting and rhizomatous species may be low.	1S
Land Imprinter	cylinder or drums with varied angle iron welded to the surface- can have seed dispenser attached to frame	rough, rocky, and brush covered terrain- not efficient in dense shrubs, grass communities, or well compacted soils.	1S
Disk Chain	An anchor chain with cutout disk on every other link.	Smooth, rough, uneven, and rocky terrain in all vegetation types, works well to reduce cheatgrass and perennial species.	1S
Smooth anchor chain	Heavy anchor chain, 40-160 lbs per link, with swivels on each end.	Uproots trees and shrubs, releases understory, covers seed, will not uproot sprouting shrubs/trees or flexible trees.	1S

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Ely-anchor chain	heavy chain with steel bars welded cross ways to chain links	Thins trees/shrubs to release understory vegetation, has tendency to drag trees and lift chain.	1S
Dixie sager	heavy anchor chain with railroad rail welded horizontal to each link	Used for big sage and smaller trees and releasing understory vegetation- chain lifts in larger trees.	1S
Pipe Harrow	a dragged spreader bar with trailing spiked pipes	Thin shrub density prepares and covers seedbeds.	1S
Cutting	use of cutting tools (chainsaws, backhoe tree grinder, etc.)	Selectively thins specified species- trees and larger shrub species- can be high labor cost.	1NS
Handpulling	Pulling plants by hand.	Individual and species selective- high labor cost and limited for broad landscapes- species limited.	1NS
Digging/Hoeing	Hand treatment.	high labor and limited for broad landscapes- used for rhizomatous species, construction of fire lines, etc.	1NS
Aerial Application	Broadcast spray with helicopter or airplane.	Used for landscape general effective herbicide application.	2
Spot Application	Handheld, horseback, ATV sprayers, etc.	Directional (nozzles sprayer). Target specific species/plants with some impacts to non-targeted species.	2
Ground Broadcast Application	Spread granules, or pellets using ground applications	Used for landscape general effective herbicide application.	2
Moisture Retention Additive (i.e. Stockosorb)	Polymer used as a soil additive to increase moisture and nutrient retention of soils.	Use mostly in agricultural applications in arid landscapes to create a predictable moisture and nutrient release.	1
Broadcast Burn	Large scale intentional controlled fire to reduce fuel load using aerial igniters (broadcast burns), vehicle mounted ignitions, and handheld igniters.	Reduce fuel load in large scale landscape level to create open seed surface.	2
Spot Burns	Smaller scale intentional controlled fire to reduce fuel load using vehicle mounted ignitions, and handheld igniters.	Smaller areas for specific weed species control	2

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Insects	use of insect predators from plants native habitat to control populations	Plant specific and will not eradicate whole populations.	2
Pathogens	Use of plant diseases to control populations, i.e. smuts.	Species specific, effective to reduce/eliminate reproductive capabilities.	2
Targeted Grazing	Use of specific or combinations of livestock such as sheep, goats, and cattle.	Time of year and range from species specific to generalized fuel reductions.	2
Drill Seeding		adaptable to different seed types, different types of machines for different soil types	1
Broadcast Seeding	aerial (plane) or ground broadcasting (ATV or truck) spreads seed with blowers or rotary spreaders	Useful for large areas or difficult soils or access areas.	3
Brillion Seeder	two seed boxes placed above two standard cultipackers	Precise rates over smooth areas, creates firm seed beds.	1NS/3
Surface Seeder	drops seed onto a line of tires that gently press seed onto the surface	Used for species that germinate on or near ground surface	1NS
Interseeder	seeds into existing vegetation	Restricted to areas relatively rock or debris free- shrubs, forbs, grasses with little or no seed bed preparation	1NS
Hydroseeder	truck mounted spray combining seed, fertilizer, mulch, and soil amendments	Can be applied in steep and rocky areas- several disadvantages to rangeland applications	1NS
Steep-slope scarifier and seeder	Metal tines attached to a boom which till up the soil on steep inaccessible slopes followed by a broadcast seeding and cover and compact soils.	Used for steep inaccessible slopes, i.e. road cuts.	1S
Live Plantings	Manual planting of plugs, supercells, or bare-root plants	Application for areas where high success rate is desired.	3

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Natural Regeneration (Use Management)	Manage access to the area for disturbance factors (permitted grazing, recreation, forest resources) to allow the area to naturally recovering to targeted condition.	Areas where existing community is capable of naturally recovering with limited disturbance factors.	3
Irrigating	Increase moisture of area by irrigating.	Very site specific and small scale- irrigate planted or restoration area to promote growth of specified species.	3
Fertilization	Increase nutrients to the soils	Site Specific	3
Weed Free Bales	Erosion Prevention	Site Specific Erosion Prevention	3
Silt Fences	Erosion Prevention	Site Specific Erosion Prevention	3
Control Blankets	Erosion Prevention	Site Specific Erosion Prevention	3
Wattles	Erosion Prevention	Site Specific Erosion Prevention	3
Rip-rap	Erosion Prevention	Site Specific Erosion Prevention	3
Weed-free Mulch	Erosion Prevention	Site Specific Erosion Prevention	3
Hand-tool Terracing	Erosion Prevention	Site Specific Erosion Prevention	1NS
Mechanical Terracing	Erosion Prevention	Site Specific Erosion Prevention	1S
Check Dams	Erosion Prevention	Site Specific Erosion Prevention	1S
Use Restriction	Closing selected areas to public access	site specific to promote quicker rehabilitation	3
Monitoring			3
<b>Disturbance Ratings</b>			
1 - Soil impacting treatments (includes impacts to vegetation as well). - S- severe soil disturbing activities. -NS- non severe soil disturbing activities that only minimally disrupt the soil surface.			
2- Impacts vegetation- disturbs or destroys existing vegetation but has no direct disturbance to the soil.			
3- Non-invasive action- has no or negligible impacts on soil and vegetation.			