CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	**Yellow Flag Iris Control**
Proposed Implementation Date:	**Early Summer 2005**
Proponent:	**Montana Department of Fish, Wildlife & Parks** **Montana Department of Natural Resources and Conservation, respective to properties in State ownership within project area**
Location:	**Clearwater River corridor from Salmon Lake to Highway 200**
County:	**Missoula**

I. TYPE AND PURPOSE OF ACTION

The Montana FWP and DNRC propose to cooperate with a plan of the Missoula County Weed District to perform weed control on 51 acres of State lands along the Clearwater River during the 2005 and 2006 growing seasons. The weed control project would target Yellow Flag Iris growing along the Clearwater River from Salmon Lake to Highway 200 (**Figure 1)**. This Environmental Assessment (EA) evaluates the portion of the project affecting State lands administered by the Montana Department of Fish, Wildlife & Parks (FWP) and Montana Department of Natural Resources and Conservation (DNRC).

Yellow Flag Iris (*Iris pseudacorus*) (YFI) is considered noxious because it:

- Forms dense colonies that will invade and replace native plants in riparian, wetland and disturbed sites;
- Spreads aggressively through aquatic dispersal of rhizomes, vegetative fragments and seeds;
- Forms a thick mat that traps sediment and elevates the topography, creating a drier habitat that will not support many native riparian and wetland plant species;
- Excludes even the most resilient native wetland and riparian species, such as cattail;
- Produces a prolific seed that easily transports downstream to invade other valuable riparian resource areas;
- Does not provide food for wildlife;
- Forms a thick mat that blocks irrigation ditches; and
- Contains large amounts of glycosides that are poisonous to grazing animals. (References: INVADERS 2005, Tu 2003, IPANE 2004, Tryon 2005).

Figure 2. Yellow Flag Iris

Yellow Flag Iris is a pond and garden ornamental plant that was originally brought to the United States and Canada in the early 1900s (Ramey, 2001). Although YFI is a relatively new problem in Montana, it has been listed as a Category 3 noxious species in the state (USDA, 2004). Category 3 noxious weeds are "known pests in nearby states and are capable of rapid spread and render land unfit for beneficial uses" (Grubb et al, 2003). Management of Category 3 weeds focuses on education, early detection and immediate action to eradicate infestations. Additionally, YFI has been identified by the Blackfoot Challenge as a high-risk noxious weed capable of causing significant infestation problems in the Blackfoot drainage over the next five decades (INVADERS, 2005).

The existing YFI infestation is suspected to have originated from private ornamental gardens or ponds on the south end of Salmon Lake. From at least 1998 to 2005, YFI has spread from Salmon Lake downstream, affecting approximately five-miles of river corridor between Salmon Lake and Highway 200 in Missoula County (INVADERS, 2005). The YFI populations are located in a narrow corridor along the river edge. The density of Infestation ranges from trace amounts to high levels of infestation.

The YFI infestation occurs on private and State lands, but this Environmental Assessment (EA) only addresses the Proposed Action on State lands. The Missoula County Weed District will be enforcing the County Noxious Weed Management Act on private lands outside of the project area to control the source of the YFI. Letters of Notification will be mailed out this summer to private land owners and lessees in the Clearwater drainage.

The Missoula County Weed District, FWP, and DNRC are responding to the County Noxious Weed Management Act, Title 7, Chapter 22 of the Montana Codes Annotated (MCA, 2003), which requires all land managers, both public and private, to eradicate Category 3 weeds. According to the Missoula County Weed District (Otten, 2005), the Proposed Action would include:

- Application of 15-20% concentration glyphosate herbicide (Rodeo®) with LI700® surfactant and drift control agent by wiper and backpack-sprayer methods to treat both aquatic and terrestrial infected areas, respectively, in early summer 2005;
- Possible repeated treatment of approximately 10% of the original treatment area in 2006; and
- Revegetation of highly impacted terrestrial areas with native riparian plants.

The herbicide would be applied only to individual YFI plants to avoid impacts to native plant communities. Rodeo® applicators do not need to be licensed (Dow Agrosciences, 2005)

Aquatic herbicide products with glyphosate as the active ingredient include Rodeo®, AquaMaster® and AquaPro®. Rodeo® is an EPA-approved herbicide for aquatic environments (EPA, 1993). This systemic broad-spectrum herbicide is used to control floating-leaved plants like water lilies and shoreline plants like purple loosestrife. It is generally applied as a liquid to the leaves. Glyphosate is not effective on underwater plants, such as hydrilla. Although glyphosate is a broad spectrum, non-selective herbicide, a good applicator can somewhat selectively remove targeted plants by focusing the spray only on the plants to be removed. Plants can take several weeks to die and a repeat application is often necessary to remove plants that were missed during the first application (King County DNRP, 2004).

LI700® is a non-ionic surfactant and drift control additive to glyphosate formulations. LI-700® is approved for aquatic use by the NOAA Fisheries Service and is considered nearly non-toxic to fish and wildlife (NOAA, 2000). Surfactants are used to provide more even coverage, reduce drift and increase the penetration of herbicides into targeted plants.

Specimen Labels for Rodeo® and LI-700® are included as **Appendix C**.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

A list of people consulted in preparation of this EA and other related permits is provided in **Appendix B**. A decision regarding the Proposed Action will be made following the public comment period for the EA. Please see **Section 25** for agency contact information.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

The County Noxious Weed Management Act, Title 7, Chapter 22 of the Montana Codes Annotated (MCA, 2003) requires all land managers, both public and private, to eradicate Category 3 weeds. The Proposed Action requires Section 308 Authorization for Emergency Remediation & Pesticide Application from Montana Department of Environmental Quality (MDEQ).

3. ALTERNATIVES CONSIDERED:

A. No Action Alternative: Under the No Action Alternative, the Missoula County Weed District would not chemically treat 51 acres of YFI on State lands between Salmon Lake and Highway 200. The YFI would continue to occupy and spread within riparian and aquatic habitat along the Clearwater River. Missoula County, the FWP and DNRC would be in violation of the County Noxious Weed Management Act (Title 7, Ch. 22, MCA) by allowing a noxious weed to propagate.

B. Proposed Action Alternative: Under the Proposed Action, the Missoula County Weed District would chemically treat 51 acres of YFI infestation in riparian and aquatic habitat between Salmon Lake and Highway 200. Missoula County, the FWP and DNRC would comply with the County Noxious Weed Management Act (Title 7, Ch.22, MCA) by controlling the propagation of a noxious weed.

The Missoula County Weed District will be enforcing the County Noxious Weed Management Act on private and leased lands outside of the project area to control the source of the YFI. Letters of Notification will be mailed out this summer to private land owners and lessees in the Clearwater drainage.

Action Alternative Considered but Dismissed:
The following alternative was considered but dismissed from further detailed examination by the Missoula County Weed District because of the reasons listed below:

Action Alternative #1: Manual removal (hand-pulling) of 51 acres of YFI-infested lands from Salmon Lake to Highway 200. This alternative was dismissed because:

- Hand-pulling is labor intensive, which is not practical for large areas or thick weed beds;
- Rhizomes of YFI form very dense mats, which are difficult to remove using manual methods;
- Even with the most careful containment methods, it is difficult to capture all of the rhizome plant material, which can propagate new plants;
- Pulling weeds and raking stirs up sediment, making it difficult to see all of the YFI fragments;
- There is a high potential for re-colonization; plants re-grow from fragments and the treatment may need to be repeated several times each summer;

- Hand-pulling disturbs soils, which may create an erosion problem and sediment hazard to water quality; and
- Hand-pulling noxious weeds is a health hazard for workers with weed allergies.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" if no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Existing Environment: Soils within the project area consist of alluvial sandy to stony loams (USDA, 1995). The treatment area is limited to the riparian and emergent zones.

Impacts from No Action Alternative A: YFI infestations form a thick mat that traps sediment and elevates the topography, creating a drier soil habitat that will not support many native riparian and wetland plant species.

Impacts from Action Alternative B: The Proposed Action does not include physical disturbance of soils within the project area. Treatment would be implemented on foot or via boat. Heavily-infested terrestrial areas would be revegetated with native sedge and rush plugs to prevent soil erosion and re-colonization (Otten, 2005). Glyphosate is not generally active in soils and has a half-life of 2 to 249 days, depending on soil texture and organic matter content. The surfactant used with many glyphosate formulations has a half-life of less than one week. Soil microbes break down glyphosate and surfactants that are added to glyphosate formulations. Glyphosate binds strongly to soil particles and is not readily taken up by plant roots (USDA, 2000).

Removal of the YFI infestation would maintain the riparian soil environment for native riparian and wetland plant species.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

Existing Environment: The Clearwater River is a fish-bearing stream, as identified by the Montana FWP (MFISH, 2005). The Clearwater River is classified as a navigable river; therefore the State of Montana claims ownership of the river bed from the low-water mark to the low-water mark.

The Montana Water Quality Standard classification for the Clearwater River is B-1, indicating that its waters are to be "maintained suitable for drinking, culinary and food processing purposes after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply" (ARM 17.30.607). The Clearwater River is not included in the Montana Department of Environmental Quality (MDEQ) 2002 303d list of water quality-impaired waters.

The Clearwater River is likely a "gaining stream" within the project area, based on local geology, groundwater levels, and topography. The river likely "gains" water from local groundwater sources, rather than "losing" water, or recharging the local groundwater. There are approximately 11 wells located within ¼ mile of the project area. Groundwater in these wells is as shallow as 10 feet below the ground surface (GWIC, 2005). The Proposed Action would occur in the riparian area of the Clearwater River. Surface soils within the project area consist of sandy to stony loams with high transmissivity (USDA, 1995).

There are six surface water Points of Diversion from the Clearwater River within the project area (DNRC WRQS, 2005).

Impacts from No Action Alternative A: The YFI infestation would likely continue to form a thick mat that elevates the topography and creates a drier habitat that will not support many native riparian and wetland plant species. Native riparian and wetland plant species would not be allowed to support filtering and water storage in aquatic environments.

Diversion ditches may be blocked by YFI infestation, which has occurred in the Ninepipes Wildlife Refuge of Montana (Tyron, 2005). Flow problems through diversion ditches as a result of the infestations would inhibit water distribution to water users.

If the Proposed Action is not implemented, there would be no potential releases of herbicide to surface or groundwater.

Impacts from Action Alternative B: The Proposed Action would include manual application of Rodeo® glyphosate herbicide with LI-700® surfactant to 51-acres of YFI infestation. The first application would occur once in early summer 2005 and a second application to approximately 10% of the original area may occur in early summer 2006.

Even with spot application of Rodeo® on riparian and emergent YFI plants, some trace amounts of the herbicide would likely enter surface water and contact soil in the project area. However, the adverse effects of the herbicide to water quality and aquatic environments are expected to be minimal, considering the following:

- Glyphosate is EPA-approved for treating invasive plant species in and around aquatic environments;
- Glyphosate is not easily released from soil particles into water moving through soil and is degraded readily in soil and water by native microorganisms;
- Glyphosate has a low leaching potential into groundwater (EXTOXNET 1996, CIPWG 2001, USDA, 2000);
- A 2004 San Francisco water monitoring study of glyphosate with LI-700® surfactant application in an aquatic environment showed "no significant changes [in water quality] throughout the monitoring period of seven to eight days" (SFEISP, 2004);
- Monitoring data from a Washington study of glyphosate herbicide with LI-700® surfactant showed glyphosate concentrations up to 310 parts per billion (ppb) in surface water samples collected one hour after treatment, well below the EPA drinking water standard of 700 ppb. Samples collected from the same sites 24 hours after the treatment did not contain glyphosate above laboratory detection limits (WA Ecology, 2004); and
- Affected surface water is not expected to enter groundwater (and wells) within the Clearwater River project area.

The EPA and MDEQ WQB7 groundwater and surface water quality standard for glyphosate is 700 ppb. A short-term exemption from the WQB7 standard must be authorized by the MDEQ before

approval of the Proposed Action (Section 308 Permit). Under MCA 75-5-308, the Section 308 Permit is issued to projects that promote the public interest, including "application of a pesticide that is registered by the United States Environmental Protection Agency pursuant to 7 U.S.C. 136(a) when it is used to control nuisance aquatic organisms or to eliminate undesirable and nonnative aquatic species" (MCA, 2003). There is no EPA or MDEQ water quality standard for the active components of LI-700®.

Removal of the YFI infestation would help to maintain flow to diversion ditches, maintaining water distribution to water users.

Although backpack and wiper spot-treatments would be employed to target YFI individuals, some of the herbicide may enter surface water by unintentional application or drift, creating short-term impacts to surface water quality. Those impacts would be permitted by the MDEQ under MCA 75-5-308. It is not anticipated that glyphosate would reach area groundwater, domestic wells, or agricultural fields, based on the high solubility of glyphosate in water, rapid degradation of the herbicide in surface water, low leaching potential, and high adsorption of glyphosate to soil particles.

Cumulative Effects: No other weed control projects using herbicide are planned for the project area by government agencies. However, there may be isolated private application of herbicide in the project area. The negative cumulative effects to groundwater or surface water are expected to be minimal as a result of the Proposed Action and other weed control efforts.

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6. AIR QUALITY:

What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

NONE – The project area is not located within a Class I Airshed or Nonattainment area (MDEQ, 2004)

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7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

Existing Environment: The project area is currently wetland and riparian plant communities infested with YFI. These communities occur along the Clearwater River south of Salmon Lake and north of Highway 200. Wider portions of the river are named Elbow Lake and Blanchard Lake. A diverse array of vegetative communities make up the Clearwater River floodplain, due in part to the low gradient, highly sinuous and often braided Clearwater River channel. These communities include dense willow (*Salix spp.*) dominated scrub/shrub wetlands, mature forested wetlands, emergent marsh dominated cutoff meander channels, and groundwater fed roadside ditch wetlands. Common species include, black cottonwood *(Populus trichocarpa)*, aspen *(Populus tremuloides)*, Engelmann spruce *(Picea engelmannii)*, red-osier dogwood, willow, rose, mint *(Mentha arvensis)*, fireweed *(Epilobium angustifolium)*, reed canary grass, and sedge (*Carex spp.*) (LWC, 2002). Steeper banks of the river (and lakes) tend to be vegetated by woody shrubs (e.g. willows), for a width of only a few feet. This narrow riparian zone directly abuts a grassland bench. Shallower slopes have broader, shallow wetland/marsh communities.

Howell's Gumweed, a Sensitive Plant Species according to the USDA Forest Service, has been identified by the Montana Natural Heritage Program (MNHP) as occurring within the project area. The MNHP report indicates that the species was identified at the Clearwater Crossing river access and Blanchard Lake in 1982 but could not be relocated at either location during a follow-up survey in 1986 (MNHP, 2005).

Impacts from No Action Alternative A: The YFI would:

- Continue to occupy and replace other riparian and emergent plant species in areas of existing infestations, excluding all other plant species, even the most resilient native species, such as cattail; and
- Continue to spread downstream to other habitats via aquatic seed dispersal, also excluding other riparian species.

YFI has spread through the Ninepipes Wildlife Refuge and the Crow Creek drainage of the Flathead Indian Reservation in Montana (Price 2005, Tryon 2005). YFI is extremely competitive in wetland and riparian environments and can replace a cattail (*Typha)* stand within one to three years (Price, 2005).

Impacts from Action Alternative B: The YFI cover would be removed using a glyphosate herbicide formulation in wiper applicators and in backpack sprayers. The glyphosate formulation would be applied only to individual YFI plants to avoid impacts to native plant communities. Retreatment may occur in heavily-infested areas. Heavily-infested terrestrial areas would be revegetated with native sedge and rush plugs to prevent soil erosion and re-colonization (Otten, 2005). Native plants would be allowed to re-colonize infested areas, supplying habitat and food for animal species.

Although backpack and wiper methods would be employed to target YFI individuals, impacts to non-target species could occur by unintentional application or drift of Rodeo®, which is a non-specific herbicide. The surfactant added to the glyphosate, LI-700®, is intended to reduce drift but will not eliminate it. Glyphosate has a half-life of 2 to 249 days, is not generally active in soils and is not readily taken up into plant roots; therefore, other plants could begin to recolonize the YFI-infested areas. Underwater plants, such as hydrilla, would not be affected by the glyphosate, which is not effective on underwater plants.

No adverse impacts to Threatened, Endangered, or Sensitive plant species are anticipated because of the Proposed Action.

Cumulative Effects: Cumulative effects to native vegetation are expected to be positive as a result of the Proposed Action. Native plants would be allowed to re-colonize infested areas, supplying habitat and food for animal species. YFI would not continue to replace other riparian and emergent plant species.

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8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

Existing Environment: The Clearwater River emergent and riparian habitat is utilized by various mammals, waterfowl, fish and invertebrates. Elk, deer, grizzly bear, lynx, and gray wolf are occasional migrants along the river corridor, but key summer and winter range habitats are west and east of the river, particularly the Blackfoot-Clearwater Wildlife Management Area east of Highway 83. Other mammals include otter, mink, and muskrat. Reptiles along the river include the western painted turtle, rubber boa and garter snake. Amphibians include spotted frog, long-toed salamander and Rocky Mountain toad (FWP & DNRC, 2003). Avian species that may be present include the bald eagle, osprey, kingfisher, waterfowl, black-backed woodpecker, flammulated owl, peregrine falcon, pileated woodpecker, common loon and mountain plover (DNRC, 2003). Threatened, Endangered, and Sensitive Species (TES) are discussed in **Section 9** below.

Fish species present in the Clearwater River include bull trout, westslope cutthroat trout and many other species of native and non-native fish (MFISH, 2005). Aquatic invertebrates inhabit vegetation, water column and substrate environments.

The YFI-dominated habitat of the project area is reducing the diversity of native plants. Limitations to native vegetation and habitat have been documented to impact the associated stream substrate. Aquatic invertebrates are a critical food source for fish species and are very sensitive to changes in habitat suitability.

Waterfowl nests in the project area could be located in upland or riparian zones and could be occupied from approximately March through August, though typically most nesting is over by the end of July (Traxler, 2005). In the Ninepipes Wildlife Refuge, YFI-infested areas are not utilized by waterfowl, other birds or aquatic mammals such as mink (Tryon, 2005). The same situation is likely the case along the Clearwater River.

YFI infestations currently threaten grazing animals, as the glycosides in YFI are a potential poison to grazing livestock (IPANE, 2004). Grazing wildlife, such as deer and elk, rarely eat YFI (Sutherland, 1990).

Impacts from No Action Alternative A: The YFI infestation would continue to decrease food and habitat opportunities for mammals and waterfowl by eliminating other riparian and emergent plants that are suitable as food, cover and nesting areas. The glycosides in YFI would continue to be a potential poison to livestock. The YFI-dominated habitat would continue to lessen diversity in the riparian zone and reduce habitat suitability for fish and aquatic invertebrates.

Impacts from Action Alternative B: The YFI infestation would be controlled from Salmon Lake to Highway 200 using a glyphosate herbicide formulation in wiper applicators and backpack sprayers. The herbicide would be applied only to YFI individuals to avoid impacts to native plant communities and wildlife habitat.

Glyphosate formulations are nearly non-toxic to fish, amphibians, insects and birds and may be slightly toxic to aquatic invertebrates, with normal use of the herbicide. Glyphosate has a relatively low potential for bioconcentration (EXTOXNET 1996, Giesy 2000, USDA 2000). The EPA has determined that the "effects of glyphosate on fish, birds mammals and invertebrates is minimal" (EPA, 1993). In general, recent studies show that applications of glyphosate formulations overall have less impact to wildlife populations than non-herbicide weed management methods (USDA, 2000). The surfactant added to the glyphosate, LI-700®, is considered to have an extremely low toxicity to fish and wildlife and is approved for use by the NOAA Fisheries Service (NOAA, 2000).

Removal of YFI would allow native riparian and emergent plant habitats to populate the project area. Nesting waterfowl and mammals would have more habitat opportunities along the river after native plant species return to YFI-infested areas. Negative impacts to wildlife are expected to be minimal because:

- Glyphosate is relatively inactive in soils, dissolved readily in surface water and is degraded from 2 to 249 days by microbes;
- Glyphosate is nearly non-toxic to fish and amphibians and may be slightly toxic to aquatic invertebrates;
- Glyphosate has a low chance of bioaccumulation;
- The surfactant added to the glyphosate, LI-700®, is considered to have an extremely low toxicity to fish and wildlife; and
- The treated (and untreated) YFI populations are unpalatable to grazing wildlife.

Cumulative Effects: The negative cumulative effects to terrestrial, avian or aquatic species are expected to be minimal. The negative cumulative effects to wildlife are expected to be less than allowing the YFI to propagate, continuing to eliminate suitable wildlife habitat.

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9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

Existing environment: A search for Threatened, Endangered and Sensitive (TES) wildlife species in the project area revealed that lynx, grizzly bear, gray wolf, cutthroat trout and bull trout may occur in the region of the Proposed Action (MNHP, 2005). According to the FWP (Thompson, 2005), grizzly bear, gray wolf and lynx do not regularly occupy the project area but may use the area to connect to other occupied habitats.

Bald Eagle Nests: There are four active bald eagle nests within 5 miles of the project area (LWC 2002, Thompson 2005):

1. The "Clearwater" nest occurs on a hillside west of the Clearwater River near Blanchard Lake. This nest is approximately 1-mile west of Highway 83.

2. The "Salmon Outlet" nest is located near the outlet of Salmon Lake, less than ¼ mile from Highway 83. The nest occurs on the west side of the lake and is highly visible from the roadway.

3. The "Salmon Lake" nest is located on the northwest end of Salmon Lake, approximately ½ mile from Highway 83.

4. The "Sperry Grade" nest is located on the Blackfoot River approximately 4-miles east of Clearwater Crossing.

Bald eagles incubate eggs in their nests from as early as February to as late as mid-May. Fledglings will remain in the nest as late as late June when they begin to leave the nest. Immature bald eagles will leave their natal breeding ground their first autumn (USDI, 1994). In addition to the active nesting territories, eagles are known to winter in the project area, feeding primarily on winter and road-killed big game animals (LWC, 2002).

Waterfowl nests could be occupied from March until August, though nesting typically is over by the end of July (Traxler, 2005).

Bull Trout: The Clearwater River supports a migratory population of bull trout (Berg, 2005). Migratory fish spawn and rear their progeny from one to several years in tributary streams before migrating downstream to larger rivers or lakes where they mature and spend most of their adult life (MBTSG, 1998). The population of migratory bull trout in the Clearwater River spawn primarily in Morrell Creek but do not spawn in the Clearwater itself. There are very few if any bull trout individuals that reside in the Clearwater River in the summer months. High water temperatures from lake outflow make conditions unsuitable for bull trout after approximately mid-July (Berg 2005, Knotek 2005).

Impacts from No Action Alternative A:

Bald Eagle: As discussed in **Section 8** above, the YFI infestation would continue to decrease food and habitat opportunities for small mammals, waterfowl, fish and aquatic invertebrates by eliminating other riparian and emergent plants that are suitable as food, cover and nesting areas. This reduction in habitat could result in a reduction of feeding opportunities for eagles in the project area.

Bull Trout: The YFI-dominated habitat would continue to lessen diversity in the riparian zone and reduce habitat suitability for aquatic invertebrates, potentially reducing feeding opportunities for bull trout.

Other TES Species: The YFI infestation would continue to decrease food, cover and nesting opportunities for TES species that occupy or travel through the project area.

Impacts from Action Alternative B: The herbicide application is anticipated to take approximately two weeks and would be implemented on foot or via boat (Otten, 2005). Crews using wiper applicators and backpack sprayers are expected to be along the river in the early summer of 2005.

Bald Eagle: Removing the YFI infestation would re-establish food, cover and nesting opportunities for waterfowl, small mammals and fish. This enlarged habitat after YFI eradication may increase the feeding opportunities for eagles in the project area. Negative impacts to bald eagles are expected to be minimal because:

- Bald eagle nests may be occupied but incubation should be complete by the time of the treatment in early summer. The fledglings should be able to leave the nest;
- Glyphosate is nearly non-toxic to fish, a prey base for bald eagles;
- Glyphosate has a minimal effect on birds, fish, mammals and invertebrates and a relatively low chance of bioaccumulation;
- The surfactant added to the glyphosate, LI-700®, is considered to have an extremely low toxicity to fish and wildlife;
- Noise from the project is expected to be minimal; and
- Birds in this portion of the river are relatively used to transient human presence (LWC, 2002). Recreation traffic along the river for fishing and boating is relatively heavy. Vacation home use and waterfront recreation is more common during the summer months.

Bull Trout: The application of glyphosate is not expected to have an impact to bull trout because:

- Glyphosate is nearly non-toxic to fish;
- Glyphosate has a low chance of bioaccumulation;
- The surfactant added to the glyphosate, LI-700®, is considered to have an extremely low toxicity to fish and wildlife; and
- The Clearwater River does not support bull trout in the summer months and is not known as a bull trout spawning habitat.

Other TES Species: Removing the YFI infestation would re-establish food, cover and nesting opportunities for TES species that occupy or travel through the project area.

Cumulative Effects: The negative cumulative effects to TES species are expected to be minimal. Glyphosate herbicide:

- Is relatively inactive in soils, dissolved readily in surface water and is degraded from 2 to 249 days by microbes;

- Is nearly non-toxic to fish and amphibians and may be slightly toxic to aquatic invertebrates; and
- Has a low chance of bioaccumulation.

The negative cumulative effects to wildlife are expected to be less than allowing the YFI to propagate, continuing to eliminate suitable wildlife habitat.

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10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

NONE – A cultural resource file review was not performed for the project area; however, the State Historical Preservation Office did not consider the Proposed Action weed control methods to be a threat to potential cultural resources (Murdo, 2005).

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11. AESTHETICS:
Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

NONE

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12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:
Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

NONE

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13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:
List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

FWP (Thompson, 2005):
Grazing: Grazing leases on FWP lands within the project area are fenced-out of the riparian area where the treatment of YFI would occur. No additional grazing leases are anticipated in the project area.

New or Ongoing Projects: No additional FWP projects, such as new campgrounds or fishing access sites, are anticipated within the project area. There are no ongoing FWP projects on the FWP lands within the project area.

Weed Control: Knapweed was spot-sprayed on upland areas at Harper's Lake with 2,4-D, Transline or Tordon in 2000, 2001, 2002, 2003 and 2004. Knapweed was spot-sprayed at Clearwater Crossing with the same herbicides in 2000 and 2002.

DNRC (Wallace, 2005):
Grazing: There are no grazing leases on the DNRC lands within the project area.

New or Ongoing Projects: Timber harvest is ongoing within Clearwater River #1 tract on upland areas of the SW1/4 of Section 20,T15N, R14W. Approximately 50 to 80 acres will be harvested in the winter of 2005-2006.

Weed Control: The DNRC aerially applied Tordon® to control knapweed on T15N, R14W, Section 20 once in the last two years.

These actions, plans and projects within the project area, in combination with the Proposed Action, are not anticipated to create negative cumulative impacts.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:
Identify any health and safety risks posed by the project.

NONE – Visitors to State lands and occupants of DNRC lease cabin sites could be exposed to Rodeo® herbicide through unintentional drift onto surface water and soil, or by contact with vegetation that has been treated with the herbicide. They also could consume food or water that has traces of the herbicide through drift or vegetation treated with herbicide. However, there are no reported cases of adverse health effects in humans after exposure to glyphosate or its formulations. Glyphosate is considered to have a low risk of health effects to humans when used correctly (USDA, 2002). Glyphosate is nearly non-toxic by ingestion and skin exposure. Glyphosate is non-teratogenic, non-mutagenic, non-carcenogenic and is "unlikely" to produce reproductive effects in humans (EXTOXNET, 1996).

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

NONE – Grazing leases located on FWP lands are fenced out of the treatment area. There are no grazing leases on the DNRC lands. There are no industrial activities that would be affected by the Proposed Action. According to the FWP there are no river outfitters on this portion of the Clearwater River (Cockerham, 2005).

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:
Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

NONE

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:
Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

NONE

18. DEMAND FOR GOVERNMENT SERVICES:
Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

NONE

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:
List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

NONE – The Proposed Action does not conflict with any local zoning or management plans. The Proposed Action follows the requirements of the MCA Title 7, Ch.22 (MCA, 2003) and the Missoula County Weed Management Plan.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

Existing Environment: There are currently two campgrounds/fishing access locations on FWP lands within the project area: one at Harper's Lake and one at Clearwater Crossing. Fishing and recreation use is heavy at Elbow Lake and Blanchard Lake within the project area. DNRC leases several cabin sites along Elbow Lake for recreation use. Fishing, hunting, floating and swimming may occur on all portions of the Clearwater River within the project area.

Impacts from No Action Alternative A: The YFI infestation would continue to decrease food and habitat opportunities for fish, mammals and waterfowl. The quality of fishing and hunting opportunities may decrease as a result of the decrease in plant diversity in the riparian and emergent habitats.

Impacts from Action Alternative B: The YFI infestation would be controlled, allowing a diverse riparian and emergent habitat for fish, mammals and waterfowl. Fishing and hunting opportunities would benefit from the diverse habitats.

Although human health impacts are not expected to result from the Proposed Action (see **Section 14** above), there may be a perception of ill effects as a result of the Proposed Action. Recreational users may be repelled by the sight of herbicide application, prompting them leave the area and possibly complain to local authorities.

There are no negative cumulative impacts to recreation expected as a result of the Proposed Action.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

NONE

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

NONE – Impacts to recreation users and state land waterfront lease-holders are discussed in **Section 20.**

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

NONE

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the Proposed Action.

NONE

EA Checklist Prepared By:	**Name:**	Stephanie M. Lauer and Nancy Winslow	**Date:** June 10, 2005
	Title:	Environmental Scientist/Water Resources Specialist and Senior Environmental Scientist Land & Water Consulting, Inc./PBS&J	

V. FINDING

25. ALTERNATIVE SELECTED:

A decision will be made following the public comment period. Please address comments to:

John Firebaugh
Montana FWP
3201 Spurgin Road
Missoula, MT 59804
(406) 542-5500
jfirebaugh@mt.gov

Renee Myers
Montana DNRC
1401 27th Avenue
Missoula, MT 59804-3199
(406) 542-4265
remyers@mt.gov

Comments must be received or postmarked no later than **July 6, 2005.**

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Based on an evaluation of impacts to the physical and human environment, under MEPA, the Proposed Action is not a significant action affecting the human environment; therefore, an environmental impact statement is not a necessary level of review.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

☐	EIS	☐	More Detailed EA	x	No Further Analysis

EA Checklist Approved By:	**Name:**	Mack Long
	Title:	Regional Supervisor, Montana FWP
Signature:		**Date:** 6/10/05

EA Checklist Approved By:	**Name:**	Anthony Liane
	Title:	Area Manager, Southwestern Land Office, Montana DNRC
Signature:		**Date:** 6/13/05

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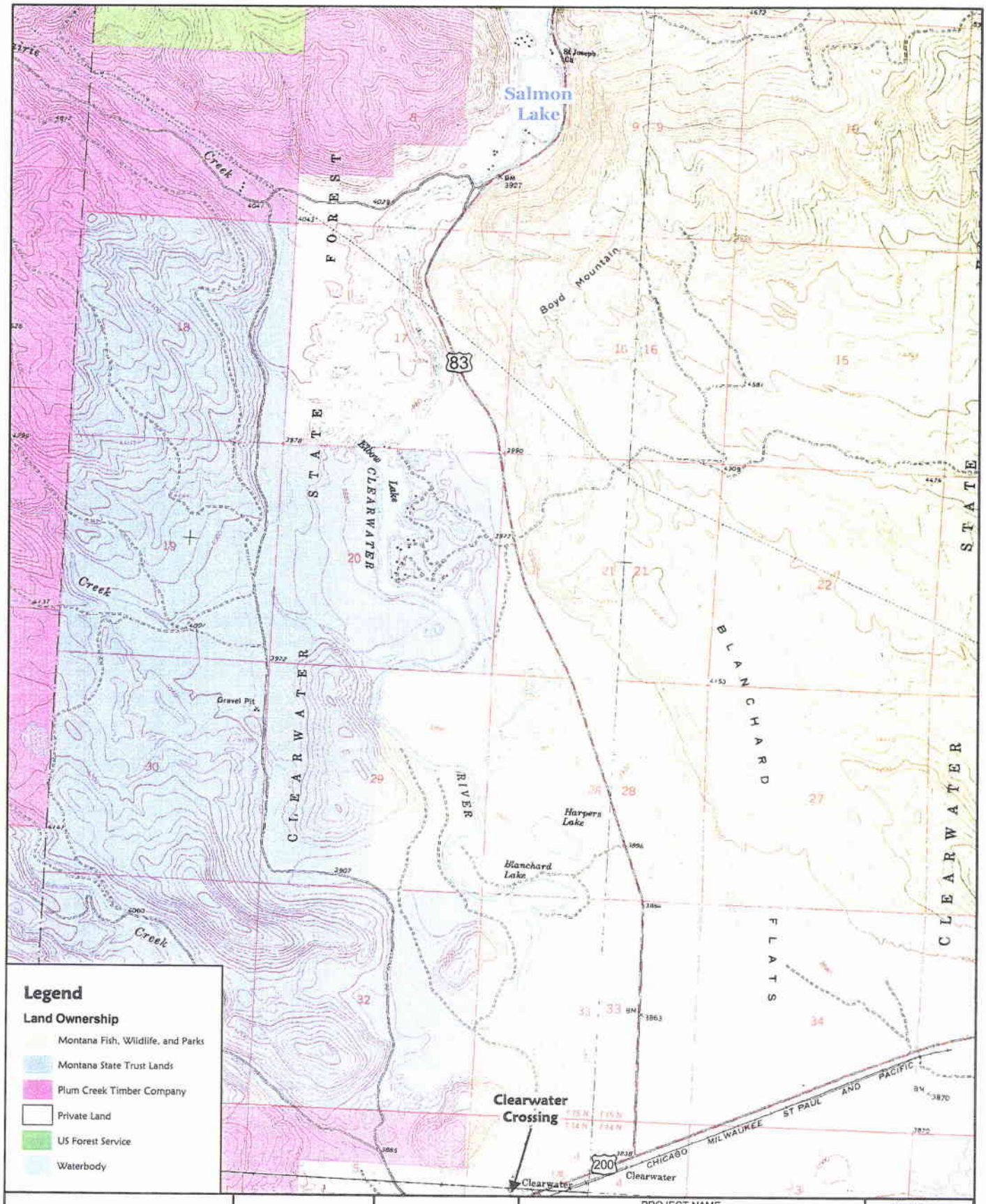
Appendix A

PROJECT MAP

Yellow Flag Iris Control EA



LAND & WATER CONSULTING, INC. PO Box 8254 Missoula, MT 59807 A Division Of PBS	Project No: B12493.00	Drawn By: JJC	PROJECT NAME: Yellow Flag Iris Control EA
	Location: Missoula, MT	Project Mgr: N. Winslow	
	Scale: 1:36,000	Checked: Appvd:	DRAWING TITLE: Vicinity Map
0 2,000 4,000 Feet	FILE NAME: B12493_YFI.mxd		FIGURE 1 REV -

Appendix B

CONSULTATION

Yellow Flag Iris Control EA

INDIVIDUALS CONSULTED IN PREPARATION OF THIS EA

Montana DNRC -
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1401 27th Avenue
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Mike Thompson
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Montana FWP – Region 2
Seeley Lake Field Office
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William Knotek
406-542-5506

Land and Water Consulting/PBS&J personnel involved with this EA:

- Stephanie Lauer, Environmental Scientist/Water Resources Specialist
- Nancy Winslow, Environmental Scientist/Geologist
- Barry Dutton, Certified Professional Soil Scientist

Land and Water Consulting/PBS&J
P.O. Box 8254
Missoula, MT 59807
406-721-0354

Appendix C

SPECIMEN LABELS - RODEO® AND LI-700®

Yellow Flag Iris Control EA

Specimen Label

Dow AgroSciences

Rodeo®

Herbicide

For aquatic weed and brush control. For control of annual and perennial weeds and woody plants in and around aquatic and other noncrop sites; also for use in wildlife habitat areas, for perennial grass release, and grass growth suppression.

Avoid contact of herbicide with foliage, green stems, exposed non-woody roots or fruit of crops, desirable plants and trees, because severe injury or destruction may result.

Active Ingredient(s):	
glyphosate[†]: N-(phosphonomethyl)glycine, isopropylamine salt	53.8%
Inert Ingredients	46.2%
Total Ingredients	100.0%

[†]Contains 5.4 pounds per gallon glyphosate, isopropylamine salt (4 pounds per gallon glyphosate acid).

EPA Reg. No. 62719-324

Keep Out of Reach of Children

CAUTION PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Precautionary Statements

Hazards to Humans and Domestic Animals

Harmful if Inhaled

Avoid breathing spray mist. Remove contaminated clothing and wash before reuse. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE (Personal Protective Equipment). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

First Aid

If inhaled: Remove individual to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

Environmental Hazards

Do not contaminate water when disposing of equipment washwaters. Treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss can cause fish suffocation.

In case of leak or spill, soak up and remove to a landfill.

Physical or Chemical Hazards

Spray solutions of this product should be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined steel containers.

Do not mix, store or apply this product or spray solutions of this product in galvanized steel or unlined steel (except stainless steel) containers or spray tanks. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas, which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

Notice: Read the entire label. Use only according to label directions. **Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" elsewhere on this label.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

This is an end-use product. Dow AgroSciences does not intend and has not registered it for reformulation. See individual container label for repackaging limitations.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical resistant gloves made of any waterproof material
- Shoes plus socks

Storage and Disposal

Do not contaminate water, food, feed or seed by storage or disposal.
Storage: Store above 10°F (-12°C) to keep product from crystallizing. Crystals will settle to the bottom. If allowed to crystallize, place in a warm room 68°F (20°C) for several days to redissolve and roll or shake container or recirculate in mini-bulk containers to mix well before using.
Pesticide Disposal: Wastes resulting from use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures.
Container Disposal: Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Do not reuse this container. Triple rinse (or equivalent). Then puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

General Information
(How this product works)

This product herbicide is a water-soluble liquid which mixes readily with water and nonionic surfactant to be applied as a foliar spray for the control or destruction of many herbaceous and woody plants. Rodeo is intended for control of annual and perennial weeds and woody plants in and around aquatic and other noncrop sites; also for use in wildlife habitat areas, for perennial grass release, and grass growth suppression.

The active ingredient in Rodeo moves through the plant from the point of foliage contact to and into the root system. Visible effects on most annual weeds occur within 2 to 4 days, 7 days or more on most perennial weeds, and 30 days or more on most woody plants. Extremely cool or cloudy weather following treatment may slow the activity of this product and delay visual effects of control. Visible effects include gradual wilting and yellowing of the plant which advances to complete browning of above-ground growth and deterioration of underground plant parts.

Unless otherwise directed on this label, delay application until vegetation has emerged and reached the stages described for control of such vegetation under the "Weeds Controlled" section of this label.

Unemerged plants arising from unattached underground rhizomes or root stocks of perennials or brush will not be affected by the spray and will continue to grow. For this reason best control of most perennial weeds or brush is obtained when treatment is made at late growth stages approaching maturity.

Always use the higher rate of Rodeo and surfactant within the recommended range when vegetation is heavy or dense.

Do not treat weeds, brush or trees under poor growing conditions such as drought stress, disease or insect damage, as reduced control may result. Reduced control of target vegetation may also occur if foliage is heavily covered with dust at the time of treatment.

Reduced control may result when applications are made to woody plants or weeds following site disturbance or plant top growth removal from grazing, mowing, logging or mechanical brush control. For best results, delay treatment of such areas until resprouting and foliar growth has restored the target vegetation to the recommended stage of growth for optimum herbicidal exposure and control.

Rainfall or irrigation occurring within 6 hours after application may reduce effectiveness. Heavy rainfall or irrigation within 2 hours after application may wash the product off the foliage and a repeat treatment may be required.

Rodeo does not provide residual weed control. For subsequent residual weed control, follow a label-approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

NOTE: Use of this product in any manner not consistent with this label may result in injury to persons, animals or crops, or other unintended consequences. When not in use, keep container closed to prevent spills and contamination.

Buyer and all users are responsible for all loss or damage in connection with the use or handling of mixtures of this product or other materials that are not expressly recommended in this label. Mixing this product with herbicides or other materials not recommended in this label may result in reduced performance.

ATTENTION: Avoid drift. Extreme care must be used when applying this product to prevent injury to desirable plants and crops.

Do not allow the herbicide solution to mist, drip, drift or splash onto desirable vegetation since minute quantities of this product can cause severe damage or destruction to the crop, plants or other areas on which treatment was not intended. The likelihood of plant or crop injury occurring from the use of this product is greatest when winds are gusty or in excess of 5 miles per hour or when other conditions, including lesser wind velocities, will allow spray drift to occur. When spraying, avoid combinations of pressure and nozzle type that will result in splatter or fine particles (mist) which are likely to drift. **Avoid applying at excessive speed or pressure.**

Mixing and Application Instructions

Clean sprayer and parts immediately after using this product by thoroughly flushing with water and dispose of rinsate according to labeled use or disposal instructions.

Apply these spray solutions in properly maintained and calibrated equipment capable of delivering desired volumes. Hand-gun applications should be properly directed to avoid spraying desirable plants. Note: reduced results may occur if water containing soil is used, such as water from ponds and unlined ditches.

Mixing

Rodeo mixes readily with water. Mix spray solutions of this product as follows:

1. Fill the mixing or spray tank with the required amount of water while adding the required amount of this product (see "Directions for Use" and "Weeds Controlled" sections of this label).
2. Near the end of the filling process, add the required surfactant and mix well. Remove hose from tank immediately after filling to avoid siphoning back into the water source.

Note: *If tank mixing with Garlon* 3A herbicide, ensure that Garlon 3A* is well mixed with at least 75 percent of the total spray volume before adding Rodeo to the spray tank to avoid incompatibility.

During mixing and application, foaming of the spray solution may occur. To prevent or minimize foam, avoid the use of mechanical agitators, place the filling hose below the surface of the spray solution (only during filling), terminate by-pass and return lines at the bottom of the tank, and, if needed, use an approved anti-foam or defoaming agent.

Keep by-pass line on or near bottom of tank to minimize foaming. Screen size in nozzle or line strainers should be no finer than 50 mesh. Carefully select correct nozzle to avoid spraying a fine mist. For best results with conventional ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

IMPORTANT: When using this product, unless otherwise specified, mix 2 or more quarts of a nonionic surfactant per 100 gallons of spray solution. Use a nonionic surfactant labeled for use with herbicides.
The surfactant must contain 50 percent or more active ingredient.

Always read and follow the manufacturer's surfactant label recommendations for best results.

These surfactants should not be used in excess of 1 quart per acre when making **broadcast** applications.

Carefully observe all cautionary statements and other information appearing in the surfactant label.

Colorants or marking dyes approved for use with herbicides may be added to spray mixtures of this product. Colorants or dyes used in spray solutions of this product may reduce performance, especially at lower rates or dilutions. Use colorants or dyes according to the manufacturer's label recommendations.

Application Equipment and Techniques

ATTENTION: AVOID DRIFT. EXTREME CARE MUST BE EXERCISED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS.

Do not allow the herbicide solution to mist, drip, drift, or splash onto desirable vegetation since minute quantities of this product can cause severe damage or destruction to crops, plants, or other areas on which the treatment was not intended. The likelihood of plant or crop injury occurring from the use of this product is greatest when winds are gusty or in excess of 5 miles per hour or when other conditions, including lesser wind velocities, will allow spray drift to occur. When spraying, avoid combinations of pressure and nozzle type that will result in splatter or fine particles (mist) which are likely to drift. AVOID APPLYING AT EXCESSIVE SPEED OR PRESSURE.

Note: Use of this product in a manner not consistent with this label may result in injury to persons, animals, or crops, or other unintended consequences. When not in use, keep container closed to prevent spills and contamination.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory Information**:

Importance of Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversion section of this label).

Controlling Droplet Size: Volume-Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows product larger droplets.

Pressure-Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of nozzles-Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation-Orienting nozzles so that the spray is released backwards, parallel to the airstream will produce larger droplets than other orientations. Significant deflection from the horizontal will reduce droplet size and increase drift potential.

Nozzle Type-Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce larger droplets than other nozzle types.

Boom Length-For some use patterns, reducing the effective boom length to less than ¾ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application-Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a cross-wind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a temperature inversion, because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Aerial Equipment

For aerial application of this product in California, refer to Federal supplemental label for Rodeo herbicide entitled "For Aerial Application in California Only". In California, aerial application may be made in aquatic sites and noncrop areas, including aquatic sites present in noncrop areas that are part of the intended treatment.

For control of weed or brush species listed in this label using aerial application equipment: For aerial broadcast application, unless otherwise specified, apply the rates of Rodeo and surfactant recommended for broadcast application in a spray volume of 3 to 20 gallons of water per acre. See the "Weeds Controlled" section of this label for labeled annual and herbaceous weeds and woody plants and broadcast rate recommendations. Aerial applications of this product may only be made as specifically recommended in this label.

AVOID DRIFT. Do not apply during inversion conditions, when winds are gusty or under any other condition which will allow drift. Drift may cause damage to any vegetation contacted to which treatment is not intended. To prevent injury to adjacent desirable vegetation, appropriate buffer zones must be maintained.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations which dispense spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

Drift control additives may be used. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing in the additive label. The use of a drift control agent for conifer and herbaceous release applications may result in conifer injury and is not recommended.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **Prolonged exposure of this product to uncoated steel surfaces may result in corrosion and possible failure of the part. Landing gear are most susceptible.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38413 may prevent corrosion.

Ground Broadcast Equipment

For control of weed or brush species listed in this label using conventional boom equipment: *For ground broadcast application,* unless otherwise specified, apply the rates of Rodeo and surfactant recommended for broadcast application in a spray volume of 3 to 30 gallons of water per acre. See the "Weeds Controlled" section of this label for labeled annual and herbaceous weeds and woody plants and broadcast rate recommendations. As density of vegetation increases, spray volume should be increased within the recommended range to ensure complete coverage. Carefully select correct nozzle to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

Hand-Held and High-Volume Equipment
(Use Coarse Sprays Only)

For control of weeds listed in this label using knapsack sprayers or high-volume spraying equipment utilizing handguns or other suitable nozzle arrangements:

High volume sprays: Prepare a **3/4 to 2 percent solution** of this product in water, add a nonionic surfactant and apply to foliage of vegetation to be controlled. For specific rates of application and instructions for control of various annual and perennial weeds, see the "Weeds Controlled" section in this label.

Applications should be made on a spray-to-wet basis. Spray coverage should be uniform and complete. Do not spray to point of runoff.

Low volume directed sprays: Rodeo may be used as a **5 to 8 percent solution** in low-volume directed sprays for spot treatment of trees and brush. This treatment method is most effective in areas where there is a low density of undesirable trees or brush. If a straight stream nozzle is used, start the application at the top of the targeted vegetation and spray from top to bottom in a lateral zig-zag motion. Ensure that at least 50 percent of the leaves are contacted by the spray solution. For flat fan and cone nozzles and with hand-directed mist blowers, mist the application over the foliage of the targeted vegetation. *Small, open-*branched trees need only be treated from one side. If the foliage is thick or there are multiple root sprouts, applications must be made from several sides to ensure adequate spray coverage.

Prepare the desired volume of spray solution by mixing the amount of this product in water, shown in the following table:

Spray Solution

Desired Volume	Amount of Rodeo						
	3/4%	1%	1 1/4%	1 1/2%	2%	5%	8%
1 gal	1 fl oz	1 1/3 fl oz	1 2/3 fl oz	2 fl oz	2 2/3 fl oz	6 1/2 fl oz	10 1/4 fl oz
25 gal	1 1/2 pt	1 qt	1 1/4 qt	1 1/2 qt	2 qt	5 qt	2 gal
100 gal	3 qt	1 gal	1 1/4 gal	1 1/2 gal	2 gal	5 gal	8 gal

2 tablespoons = 1 fluid ounce

For use in knapsack sprayers, it is suggested that the recommended amount of this product be mixed with water in a larger container. Fill the knapsack sprayer with the mixed solution and add the correct amount of surfactant.

Wiper Applications

For wick or wiper applications, mix 1 gallon of this product with 2 gallons of clean water to make a 33 percent solution. Addition of a nonionic surfactant at a rate of 10 percent by volume of total herbicide solution is recommended.

Wiper applications can be used to control or suppress annual and perennial weeds listed on this label. In heavy weed stands, a double application in opposite directions may improve results. See the "Weed Controlled" section in this label for recommended timing, growth stage and other instructions for achieving optimum results

Aquatic and Other Noncrop Sites

Apply Rodeo as directed and under conditions described to control or partially control weeds and woody plants listed in the "Weeds Controlled" section in industrial, recreational and public areas or other similar aquatic or terrestrial sites on this label.

Aquatic Sites

Rodeo may be applied to emerged weeds in all bodies of fresh and brackish water which may be flowing, nonflowing or transient. This includes lakes, rivers, streams, ponds, estuaries, rice levees, seeps, irrigation and drainage ditches, canals, reservoirs, wastewater treatment facilities, wildlife habitat restoration and management areas, and similar sites.

If aquatic sites are present in the noncrop area and are part of the intended treatment, read and observe the following directions:

- **Rodeo does not control plants which are completely submerged or have a majority of their foliage under water.**
- There is no restriction on the use of treated water for irrigation, recreation or domestic purposes.
- Consult local state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.

- **NOTE:** Do not apply this product directly to water within 1/2 mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within 1/2 mile of an active potable water intake in a standing body of water such as lake, pond or reservoir. To make aquatic applications around and within 1/2 mile of active potable water intakes, the water intake must be turned off for a minimum period of 48 hours after the application. The water intake may be turned on prior to 48 hours if the glyphosate level in the intake water is below 0.7 parts per million as determined by laboratory analysis. These aquatic applications may be made only in those cases where there are alternative water sources or holding ponds which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the applications. This restriction does not apply to intermittent inadvertent overspray of water in terrestrial use sites.
- For treatments after drawdown of water or in dry ditches, allow 7 or more days after treatment before reintroduction of water to achieve maximum weed control. Apply this product within 1 day after drawdown to ensure application to actively growing weeds.
- Floating mats of vegetation may require retreatment. Avoid wash-off of sprayed foliage by spray boat or recreational boat backwash or by rainfall within 6 hours of application. Do not re-treat within 24 hours following the initial treatment.
- Applications made to moving bodies of water must be made while traveling upstream to prevent concentration of this herbicide in water. When making any bankside applications, do not overlap more than 1 foot into open water. Do not spray in bodies of water where weeds do not exist. The maximum application rate of 7 1/2 pints per acre must not be exceeded in any single broadcast application that is being made over water.
- When emerged infestations require treatment of the total surface area of impounded water, treating the area in strips may avoid oxygen depletion due to decaying vegetation. Oxygen depletion may result in fish kill.

Other Noncrop Sites

Rodeo may be used to control the listed weeds in the following terrestrial noncrop sites and/or in aquatic sites within these areas:

Habitat Restoration & Management Areas
Highways & Roadsides
Industrial Plant Sites
Petroleum Tank Farms
Pipeline, Power, Telephone & Utility Rights-of-Way
Pumping Installations
Railroads
Similar Sites

Cut Stump Application

Woody vegetation may be controlled by treating freshly cut stumps of trees and resprouts with this product. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut vegetation close to the soil surface. **Apply a 50 to 100 percent solution of this product to freshly cut surface immediately after cutting.** Delay in applying this product may result in reduced performance. For best results, trees should be cut during periods of active growth and full leaf expansion.

When used according to directions for cut stump application, this product **will control, partially control or suppress** most woody brush and tree species, some of which are listed below:

Common Name	Scientific Name
Alder	*Alnus spp.*
Coyote brush †	*Baccharis consanguinea*
Dogwood †	*Cornus spp.*
Eucalyptus	*Eucalyptus spp.*
Hickory †	*Carya spp.*
Madrone	*Arbutus menziesii*
Maple †	*Acer spp.*
Oak	*Quercus spp.*
Poplar †	*Populus spp.*
Reed, giant	*Arundo donax*
Salt cedar	*Tamarix spp.*
Sweet gum †	*Liquidambar styraciflua*
Sycamore †	*Platanus occidentalis*
Tan oak	*Lithocarpus densiflorus*
Willow	*Salix spp.*

† Rodeo is not approved for this use on these species in the state of California.

Wildlife Habitat Restoration and Management Areas

Rodeo is recommended for the restoration and/or maintenance of native habitat and in wildlife management areas.

Habitat Restoration and Maintenance: When applied as directed, exotic and other undesirable vegetation may be controlled in habitat management areas. Applications may be made to allow recovery of native plant species, to open up water to attract waterfowl, and for similar broad-spectrum vegetation control requirements in habitat management areas. Spot treatments may be made to selectively remove unwanted plants for habitat enhancement. For spot treatments, care should be exercised to keep spray off of desirable plants.

Wildlife Food Plots: Rodeo may be used as a site preparation treatment prior to planting wildlife food plots. Apply as directed to control vegetation in the plot area. Any wildlife food species may be planted after applying this product, or native species may be allowed to reinfest the area. If tillage is needed to prepare a seedbed, wait 7 days after applying this product before tilling to allow for maximum effectiveness.

Injection and Frill Applications

Woody vegetation may be controlled by injection or frill application of this product. Apply this product using suitable equipment which must penetrate into living tissue. Apply the equivalent of 1 ml of this product per 2 to 3 inches of trunk diameter. This is best achieved by applying 25 to 100 percent concentration of this product either to a continuous frill around the tree or as cuts evenly spaced around the tree below all branches. As tree diameter increases in size, better results are achieved by applying dilute material to a continuous frill or more closely spaced cuttings. Avoid application techniques that allow runoff to occur from frill or cut areas in species that exude sap freely after frills or cutting. In species such as these, make frill or cut at an oblique angle so as to produce a cupping effect and use undiluted material. For best results, applications should be made during periods of active growth and full leaf expansion.

This treatment will control the following woody species:

Common Name	Scientific Name
Oak	*Quercus spp.*
Poplar	*Populus spp.*
Sweet gum	*Liquidambar styraciflua*
Sycamore	*Platanus occidentalis*

This treatment will suppress the following woody species:

Common Name	Scientific Name
Black gum †	*Nyssa sylvatica*
Dogwood	*Cornus spp.*
Hickory	*Carya spp.*
Maple, red	*Acer rubrum*

† Rodeo is not approved for this use on this species in the state of California.

Release of Bermudagrass or Bahiagrass on Noncrop Sites

Release Of Dormant Bermudagrass and Bahiagrass

When applied as directed, this product will provide control or suppression of many winter annual weeds and tall fescue for effective release of dormant bermudagrass or bahiagrass. Make applications to dormant bermudagrass or bahiagrass.

For best results on winter annuals, treat when weeds are in an early growth stage (below 6 inches in height) after most have germinated. For best results on tall fescue, treat when fescue is in or beyond the 4 to 6-leaf stage.

Weeds Controlled

Rate recommendations for control or suppression of winter annuals and tall fescue are listed below.

Apply the recommended rates of this product in 10 to 25 gallons of water per acre plus 2 quarts nonionic surfactant per 100 gallons of total spray volume.

Weeds Controlled or Suppressed †

Note: C = Controlled; S = Suppressed

	Rate of Rodeo (Fluid Ounces Per Acre)					
Weed Species	**6**	**9**	**12**	**18**	**24**	**48**
Barley, little *Hordeum pusillum*	S	C	C	C	C	C
Bedstraw, catchweed *Galium aparine*	S	C	C	C	C	C
Bluegrass, annual *Poa annua*	S	C	C	C	C	C
Chervil *Chaerophyllum tainturieri*	S	C	C	C	C	C
Chickweed, common *Stellaria media*	S	C	C	C	C	
Clover, crimson *Trifolium incarnatum*	•	S	S	C	C	C
Clover, large hop *Trifolium campestre*	•	S	S	C	C	C
Speedwell, corn *Veronica arvensis*	S	C	C	C	C	C
Fescue, tall *Festuca arundinacea*	•	•	•	•	S	S
Geranium, Carolina *Geranium carolinianum*	•	•	S	S	C	C
Henbit *Lamium amplexicaule*	•	S	C	C	C	C
Ryegrass, Italian *Lolium multiflorum*	•	•	S	C	C	C
Vetch, common *Vicia sativa*	•	•	S	C	C	C

† These rates apply only to sites where an established competitive turf is present.

Release of Actively Growing Bermudagrass

NOTE: Use only on sites where bahiagrass or bermudagrass are desired for ground cover and some temporary injury or yellowing of the grasses can be tolerated.

When applied as directed, this product will aid in the release of bermudagrass by providing control of annual species listed in the "Weeds Controlled" section in this label, and suppression or partial control of certain perennial weeds.

For control or suppression of those annual species listed in this label, use 3/4 to 2 1/4 pints of this product as a broadcast spray in 10 to 25 gallons of spray solution per acre, plus 2 quarts of a nonionic surfactant per 100 gallons of total spray volume. Use the lower rate when treating annual weeds below 6 inches in height (or length of runner in annual vines). Use the higher rate as size of plants increases or as they approach flower or seedhead formation.

Use the higher rate for partial control or longer-term suppression of the following perennial species. Use lower rates for shorter-term suppression of growth.

Bahiagrass	Johnsongrass †
Dallisgrass	Trumpetcreeper ††
Fescue (tall)	Vaseygrass

† Johnsongrass is controlled at the higher rate.
†† Suppression at the higher rate only.

Use only on well-established bermudagrass. Bermudagrass injury may result from the treatment but regrowth will occur under moist conditions. Repeat applications in the same season are not recommended, since severe injury may result.

Bahiagrass Seedhead and Vegetative Suppression

When applied as directed in the "Noncrop Sites" section in this label, this product will provide significant inhibition of seedhead emergence and will suppress vegetative growth for a period of approximately 45 days with single applications and approximately 120 days with sequential applications.

Apply this product 1 to 2 weeks after full green-up of bahiagrass or after the bahiagrass has been mowed to a uniform height of 3 to 4 inches. Applications must be made prior to seedhead emergence. Apply 5 fluid ounces per acre of this product, plus 2 quarts of an approved nonionic surfactant per 100 gallons of total spray volume in 10 to 25 gallons of water per acre.

Sequential applications of this product plus nonionic surfactant may be made at approximately 45-day intervals to extend the period of seedhead and vegetative growth suppression. For continued vegetative growth suppression, sequential applications must be made prior to seedhead emergence.

Apply no more than 2 sequential applications per year. As a first sequential application, apply 3 fluid ounces of this product per acre plus nonionic surfactant. A second sequential application of 2 to 3 fluid ounces per acre plus nonionic surfactant may be made approximately 45 days after the last application.

Annual Grass Growth Suppression

For growth suppression of some annual grasses, such as annual ryegrass, wild barley and wild oats growing in coarse turf on roadsides or other industrial areas, apply 3 to 4 ounces of this product in 10 to 40 gallons of spray solution per acre. Mix 2 quarts of a nonionic surfactant per 100 gallons of spray solution. Applications should be made when annual grasses are actively growing and before the seedheads are in the boot stage of development. Treatments made after seedhead emergence may cause injury to the desired grasses.

Weeds Controlled

Annual Weeds

Apply to actively growing annual grasses and broadleaf weeds.

Allow at least 3 days after application before disturbing treated vegetation. After this period the weeds may be mowed, tilled or burned. See "Directions for Use," "General Information" and "Mixing and Application Instructions" for labeled uses and specific application instructions.

Broadcast Application Rates: Use 1 1/2 pints of this product per acre plus 2 or more quarts of a nonionic surfactant per 100 gallons of spray solution if weeds are less than 6 inches tall. If weeds are greater than 6 inches tall, use 2 1/2 pints of this product per acre plus 2 or more quarts of an approved nonionic surfactant per 100 gallons of spray solution.

Hand-Held, High-Volume Application Rates: Use a 3/4 percent solution of this product in water plus 2 or more quarts of a nonionic surfactant per 100 gallons of spray solution and apply to foliage of vegetation to be controlled.

When applied as directed, Rodeo plus nonionic surfactant will control the following annual weeds:

Common Name	Scientific Name
Balsamapple †	*Momordica charantia*
Barley	*Hordeum vulgare*
Barnyardgrass	*Echinochloa crus-galli*
Bassia, fivehook	*Bassia hyssopifolia*
Bluegrass, annual	*Poa annua*
Bluegrass, bulbous	*Poa bulbosa*
Brome	*Bromus spp.*
Buttercup	*Ranunculus spp.*
Cheat	*Bromus secalinus*
Chickweed, mouseear	*Cerastium vulgatum*
Cocklebur	*Xanthium strumarium*
Corn, volunteer	*Zea mays*
Crabgrass	*Digitaria spp.*
Dwarfdandelion	*Krigia cespitosa*
Falseflax, smallseed	*Camelina microcarpa*
Fiddleneck	*Amsinckia spp.*
Flaxleaf fleabane	*Conyza bonariensis*
Fleabane	*Erigeron spp.*
Foxtail	*Setaria spp.*
Foxtail, Carolina	*Alopecurus carolinianus*
Groundsel, common	*Senecio vulgaris*
Horseweed/Marestail	*Conyza canadensis*
Kochia	*Kochia scoparia*
Lambsquarters, common	*Chenopodium album*
Lettuce, prickly	*Lactuca serriola*
Morningglory	*Ipomoea spp.*
Mustard, blue	*Chorispora tenella*
Mustard, tansy	*Descurainia pinnata*
Mustard, tumble	*Sisymbrium altissimum*
Mustard, wild	*Sinapis arvensis*
Oats, wild	*Avena fatua*
Panicum	*Panicum spp.*
Pennycress, field	*Thlaspi arvense*
Pigweed, redroot	*Amaranthus retroflexus*
Pigweed, smooth	*Amaranthus hybridus*
Ragweed, common	*Ambrosia artemisiifolia*
Ragweed, giant	*Ambrosia trifida*
Rocket, London	*Sisymbrium irio*
Rye	*Secale cereale*
Ryegrass, Italian ††	*Lolium multiflorum*
Sandbur, field	*Cenchrus spp.*
Shattercane	*Sorghum bicolor*
Shepherd's-purse	*Capsella bursa-pastoris*
Signalgrass, broadleaf	*Brachiaria platyphylla*
Smartweed, Pennsylvania	*Polygonum pensylvanicum*
Sowthistle, annual	*Sonchus oleraceus*

Spanishneedles ‡‡	*Bidens bipinnata*
Stinkgrass	*Eragrostis cilianensis*
Sunflower	*Helianthus annuus*
Thistle, Russian	*Salsola kali*
Spurry, umbrella	*Holosteum umbellatum*
Velvetleaf	*Abutilon theophrasti*
Wheat	*Triticum aestivum*
Witchgrass	*Panicum capillare*

†Apply with hand-held equipment only.
‡‡Apply 3 pints of this product per acre.

Annual weeds will generally continue to germinate from seed throughout the growing season. Repeat treatments will be necessary to control later germinating weeds.

Perennial Weeds

Apply Rodeo to control most vigorously growing perennial weeds. Unless otherwise directed, apply when target plants are actively growing and most have reached early head or early bud stage of growth. Unless otherwise directed, allow at least 7 days after application before disturbing vegetation.

NOTE: If weeds have been mowed or tilled, do not treat until regrowth has reached the recommended stages. Fall treatments must be applied before a killing frost.

Repeat treatments may be necessary to control weeds regenerating from underground parts or seed.

Specific Weed Control Recommendations: For perennial weeds, apply the recommended rate plus 2 or more quarts of a nonionic surfactant per 100 gallons of spray solution. See the "General Information", "Directions for Use" and "Mixing and Application" sections in this label for specific uses and application instructions.

When applied as directed, Rodeo plus nonionic surfactant will control the following perennial weeds: (Numbers in parentheses "(-)" following common name of a listed weed species refer to "Specific Perennial Weed Control Recommendations" for that weed which follow the species listing.)

Common Name	**Scientific Name**
Alfalfa (31)	*Medicago sativa*
Alligatorweed † (1)	*Alternanthera philoxeroides*
Anise/Fennel (31)	*Foeniculum vulgare*
Artichoke, Jerusalem (31)	*Helianthus tuberosus*
Bahiagrass (31)	*Paspalum notatum*
Bermudagrass (2)	*Cynodon dactylon*
Bindweed, field (3)	*Convolvulus arvensis*
Bluegrass, Kentucky (12)	*Poa pratensis*
Blueweed, Texas (3)	*Helianthus ciliaris*
Brackenfern (4)	*Pteridium spp.*
Bromegrass, smooth (12)	*Bromus inermis*
Canarygrass, reed (12)	*Phalaris arundinacea*
Cattail (5)	*Typha spp.*
Clover, red (31)	*Trifolium pratense*
Clover, white (31)	*Trifolium repens*
Cogongrass (6)	*Imperata clylindrica*
Cordgrass (7)	*Spartina spp.*
Cutgrass, giant † (8)	*Zizaniopsis miliacea*
Dallisgrass (31)	*Paspalum dilatatum*
Dandelion (31)	*Taraxacum officinale*
Dock, curly (31)	*Rumex crispus*
Dogbane, hemp (9)	*Apocynum cannabinum*
Fescue (31)	*Festuca spp.*
Fescue, tall (10)	*Festuca arundinacea*
Guineagrass (11)	*Panicum maximum*
Hemlock, poison (31)	*Conium maculatum*
Horsenettle (31)	*Solanum carolinense*
Horseradish (9)	*Armoracia rusticana*
Ice Plant (22)	*Mesembryanthemum crystallinum*
Johnsongrass (12)	*Sorghum halepense*
Kikuyugrass (21)	*Pennisetum clandestinum*
Knapweed (9)	*Centaurea repens*
Lantana (13)	*Lantana camara*
Lespedeza, common (31)	*Lespedeza striata*
Lespedeza, sericea (31)	*Lespedeza cuneata*
Loosestrife, purple (14)	*Lythrum salicaria*
Lotus, American (15)	*Nelumbo lutea*
Maidencane (16)	*Panicum hematomon*
Milkweed (17)	*Asclepias spp.*
Muhly, wirestem (21)	*Muhlenbergia frondosa*
Mullein, common (31)	*Verbascum thapsus*
Napiergrass (31)	*Pennisetum purpureum*
Nightshade, silverleaf (3)	*Solanum elaeagnifolium*
Nutsedge, purple (18)	*Cyperus rotundus*
Nutsedge, yellow (18)	*Cyperus esculentus*
Orchardgrass (12)	*Dactylis glomerata*
Pampasgrass (19)	*Cortaderia jubata*
Paragrass (16)	*Brachiaria mutica*
Phragmites‡‡ (20)	*Phragmites spp.*
Quackgrass (21)	*Agropyron repens*
Reed, giant (22)	*Arundo donax*
Ryegrass, perennial (12)	*Lolium perenne*
Smartweed, swamp (31)	*Polygonum coccineum*
Spatterdock (23)	*Nuphar luteum*
Starthistle, yellow (31)	*Centaurea solstitialis*
Sweet potato, wild † (24)	*Ipomoea pandurata*
Thistle, artichoke (25)	*Cynara cardunculus*
Thistle, Canada (25)	*Cirsium arvense*
Timothy (12)	*Phleum pratense*
Torpedograss † (26)	*Panicum repens*
Tules, common (27)	*Scirpus acutus*
Vaseygrass (31)	*Paspalum urvillei*
Velvetgrass (31)	*Holcus spp.*
Waterhyacinth (28)	*Eichornia crassipes*
Waterlettuce (29)	*Pistia stratiotes*
Waterprimrose (30)	*Ludwigia spp.*
Wheatgrass, western (12)	*Agropyron smithii*

†Partial control.
‡‡Partial control in southeastern states. See "Specific Weed Control Recommendations" below.

Specific Perennial Weed Control Recommendations:

1. **Alligatorweed:** Apply 6 pints of this product per acre as a broadcast spray or as a 1 1/4 percent solution with hand-held equipment to provide partial control of alligatorweed. Apply when most of the target plants are in bloom. Repeat applications will be required to maintain such control.
2. **Bermudagrass:** Apply 7 1/2 pints of this product per acre as a broadcast spray or as a 1 1/2 percent solution with hand-held equipment. Apply when target plants are actively growing and when seedheads appear.
3. **Bindweed, field / Silverleaf Nightshade / Texas Blueweed:** Apply 6 to 7 1/2 pints of this product per acre as a broadcast spray west of the Mississippi River and 4 1/2 to 6 pints of this product per acre east of the Mississippi River. With hand-held equipment, use a 1 1/2 percent solution. Apply when target plants are actively growing and are at or beyond full bloom. For silverleaf nightshade, best results can be obtained when application is made after berries are formed. Do not treat when weeds are under drought stress. New leaf development indicates active growth. For best results apply in late summer or fall.
4. **Brackenfern:** Apply 4 1/2 to 6 pints of this product per acre as a broadcast spray or as a 3/4 to 1 percent solution with hand-held equipment. Apply to fully expanded fronds which are at least 18 inches long.
5. **Cattail:** Apply 4 1/2 to 6 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Apply when target plants are actively growing and are at or beyond the early-to-full bloom stage of growth. Best results are achieved when application is made during the summer or fall months.
6. **Cogongrass:** Apply 4 1/2 to 7 1/2 pints of this product per acre as a broadcast spray. Apply when cogongrass is at least 18 inches tall and actively growing in late summer or fall. Allow 7 or more days after application before tillage or mowing. Due to uneven stages of growth and the dense nature of vegetation preventing good spray coverage, repeat treatments may be necessary to maintain control.
7. **Cordgrass:** Apply 4 1/2 to 7 1/2 pints of this product per acre as a broadcast spray or as a 1 to 2 percent solution with hand-held equipment. Schedule applications in order to allow 6 hours before treated plants are covered by tidewater. The presence of debris and silt on the cordgrass plants will reduce performance. It may be necessary to wash targeted plants prior to application to improve uptake of this product into the plant.
8. **Cutgrass, giant:** Apply 6 pints of this product per acre as a broadcast spray or as a 1 percent solution with hand-held equipment to provide partial control of giant cutgrass. Repeat applications will be required to maintain such control, especially where vegetation is partially submerged in water. Allow for substantial regrowth to the 7 to 10-leaf stage prior to retreatment.
9. **Dogbane, hemp / Knapweed / Horseradish:** Apply 6 pints of this product per acre as a broadcast spray or as a 1 1/2 percent solution with hand-held equipment. Apply when target plants are actively growing and most have reached the late bud-to-flower stage of growth. For best results, apply in late summer or fall.
10. **Fescue, tall:** Apply 4 1/2 pints of this product per acre as a broadcast spray or as a 1 percent solution with hand-held equipment. Apply when target plants are actively growing and most have reached the boot-to-head stage of growth. When applied prior to the boot stage, less desirable control may be obtained.
11. **Guineagrass:** Apply 4 1/2 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Apply when target plants are actively growing and when most have reached at least the 7-leaf stage of growth.
12. **Johnsongrass / Bluegrass, Kentucky / Bromegrass, smooth / Canarygrass, reed / Orchardgrass / Ryegrass, perennial / Timothy / Wheatgrass, western:** Apply 3 to 4 1/2 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Apply when target plants are actively growing and most have reached the boot-to-head stage of growth. When applied prior to the boot stage, less desirable control may be obtained. In the fall, apply before plants have turned brown.
13. **Lantana:** Apply this product as a 3/4 to 1 percent solution with hand-held equipment. Apply to actively growing lantana at or beyond the bloom stage of growth. Use the higher application rate for plants that have reached the woody stage of growth.
14. **Loosestrife, purple:** Apply 4 pints of this product per acre as a broadcast spray or as a 1 to 1 1/2 percent solution using hand-held equipment. Treat when plants are actively growing at or beyond the bloom stage of growth. Best results are achieved when application is made during summer or fall months. Fall treatments must be applied before a killing frost.
15. **Lotus, American:** Apply 4 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Treat when plants are actively growing at or beyond the bloom stage of growth. Best results are achieved when application is made during summer or fall months. Fall treatments must be applied before a killing frost. Repeat treatment may be necessary to control regrowth from underground parts and seeds.
16. **Maidencane / Paragrass:** Apply 6 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Repeat treatments will be required, especially to vegetation partially submerged in water. Under these conditions, allow for regrowth to the 7 to 10-leaf stage prior to retreatment.
17. **Milkweed, common:** Apply 4 1/2 pints of this product per acre as a broadcast spray or as a 1 1/2 percent solution with hand-held equipment. Apply when target plants are actively growing and most have reached the late bud-to-flower stage of growth.
18. **Nutsedge: purple, yellow:** Apply 4 1/2 pints of this product per acre as a broadcast spray, or as a 3/4 percent solution with hand-held equipment to control existing nutsedge plants and immature nutlets attached to treated plants. Apply when target plants are in flower or when new nutlets can be found at rhizome tips. Nutlets which have not germinated will not be controlled and may germinate following treatment. Repeat treatments will be required for long-term control.
19. **Pampasgrass:** Apply a 1 1/2 percent solution of this product with hand-held equipment when plants are actively growing.
20. **Phragmites:** For partial control of phragmites in Florida and the counties of other states bordering the Gulf of Mexico, apply 7 1/2 pints per acre as a broadcast spray or apply a 1 1/2 percent solution with hand-held equipment. In other areas of the U.S., apply 4 to 6 pints per acre as a broadcast spray or apply a 3/4 percent solution with hand-held equipment for partial control. For best results, treat during late summer of fall months when plants are actively growing and in full bloom. Due to the dense nature of the vegetation, which may prevent good spray coverage and uneven stages of growth, repeat treatments may be necessary to maintain control. Visual control symptoms will be slow to develop.
21. **Quackgrass / Kikuyugrass / Muhly, wirestem:** Apply 3 to 4 1/2 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment when most quackgrass or wirestem muhly is at least 8 inches in height (3 to 4-leaf stage of growth) and actively growing. Allow 3 or more days after application before tillage.
22. **Reed, giant / Ice plant:** For control of giant reed and ice plant, apply a 1 1/2 percent solution of this product with hand-held equipment when plants are actively growing. For giant reed, best results are obtained when applications are made in late summer to fall.

23. **Spatterdock:** Apply 6 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Apply when most plants are in full bloom. For best results, apply during the summer or fall months.
24. **Sweet potato, wild:** Apply this product as a 1 1/2 percent solution using hand-held equipment. Apply to actively growing weeds that are at or beyond the bloom stage of growth. Repeat applications will be required. Allow the plant to reach the recommended stage of growth before retreatment.
25. **Thistle, Canada / artichoke:** Apply 3 to 4 1/2 pints of this product per acre as a broadcast spray or as a 1 1/2 percent solution with hand-held equipment for Canada thistle. To control artichoke thistle, apply a 2 percent solution as a spray-to-wet application. Apply when target plants are actively growing and are at or beyond the bud stage of growth.
26. **Torpedograss:** Apply 6 to 7 1/2 pints of this product per acre as a broadcast spray or as a 3/4 to 1 1/2 percent solution with hand-held equipment to provide partial control of torpedograss. Use the lower rates under terrestrial conditions, and the higher rates under partially submerged or a floating mat condition. Repeat treatments will be required to maintain such control.
27. **Tules, common:** Apply this product as a 1 1/2 percent solution with hand-held equipment. Apply to actively growing plants at or beyond the seedhead stage of growth. After application, visual symptoms will be slow to appear and may not occur for 3 or more weeks.
28. **Waterhyacinth:** Apply 5 to 6 pints of this product per acre as a broadcast spray or apply a 3/4 to 1 percent solution with hand-held equipment. Apply when target plants are actively growing and at or beyond the early bloom stage of growth. After application, visual symptoms may require 3 or more weeks to appear with complete necrosis and decomposition usually occurring within 60 to 90 days. Use the higher rates when more rapid visual effects are desired.
29. **Waterlettuce:** For control, apply a 3/4 to 1 percent solution of this product with hand-held equipment to actively growing plants. Use higher rates where infestations are heavy. Best results are obtained from mid-summer through winter applications. Spring applications may require retreatment.
30. **Waterprimrose:** Apply this product as a 3/4 percent solution using hand-held equipment. Apply to plants that are actively growing at or beyond the bloom stage of growth, but before fall color changes occur. Thorough coverage is necessary for best control.
31. **Other perennial weeds listed above:** Apply 4 1/2 to 7 1/2 pints of Rodeo per acre as a broadcast spray or apply as a 3/4 to 1 1/2 percent solution with hand-held equipment.

Woody Brush and Trees

NOTE: If brush has been mowed or tilled or trees have been cut, do not treat until regrowth has reached the recommended stage of growth.

Application Rates and Timing
When applied as a 5 to 8 percent solution as a directed application as described in the "Hand-Held and High-Volume Equipment" section, this product will control or partially control all wood brush and tree species listed in this section of this label. Use the higher rate of application for dense stands and larger woody brush and trees.

Specific Brush or Tree Control Recommendations: Numbers in parentheses "(-)" following the common name of a listed brush or tree species refer to "Specific Brush or Tree Control Recommendations" which follow the species listing. See this section for specific application rates and timing for listed species.

For woody brush and trees, apply the recommended rate plus 2 or more quarts of a nonionic surfactant per 100 gallons of spray solution when plants are actively growing and, unless otherwise directed, after full-leaf expansion. Use the higher rate for larger plants and/or dense areas of growth. On vines, use the higher rate for plants that have reached the woody stage of growth. Best results are obtained when application is made in late summer or fall after fruit formation.

In arid areas, best results are obtained when application is made in the spring or early summer when brush species are at high moisture content and are flowering. Ensure thorough coverage when using hand-held equipment. Symptoms may not appear prior to frost or senescence with fall treatments.

Allow 7 or more days after application before tillage, mowing or removal. Repeat treatments may be necessary to control plants regenerating from underground parts or seed. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Reduced performance may result if fall treatments are made following a frost.

See the "Directions for Use" and "Mixing and Application Instructions" sections in this label for labeled use and specific application instructions. **When applied as directed, Rodeo plus nonionic surfactant will control the following woody brush plants and trees:** (Numbers in parentheses "(-)" following common name of a listed brush or tree species refer to "Specific Brush or Tree Control Recommendations" for that species which follow the species listing.)

Common Name	Scientific Name
Alder (1)	*Alnus spp.*
Ash † (20)	*Fraxinus spp.*
Aspen, quaking (2)	*Populus tremuloides*
Bearclover, Bearmat (20)	*Chamaebatia foliolosa*
Birch (3)	*Betula spp.*
Blackberry (1)	*Rubus spp.*
Broom, French (4)	*Cytisus monspessulanus*
Broom, Scotch (4)	*Cytisus scoparius*
Buckwheat, California † (5)	*Eriogonum fasciculatum*
Cascara † (20)	*Rhamnus purshiana*
Catsclaw † (6)	*Acacia greggi*
Ceanothus (20)	*Ceanothus spp.*
Chamise (17)	*Adenostoma fasciculatum*
Cherry, bitter (7)	*Prunus emarginata*
Cherry, black (7)	*Prunus serotina*
Cherry, pin (7)	*Prunus pensylvanica*
Coyote brush (8)	*Baccharis consanguinea*
Creeper, Virginia † (20)	*Parthenocissus quinquefolia*
Dewberry (1)	*Rubus trivialis*
Dogwood (9)	*Cornus spp.*
Elderberry (3)	*Sambucus spp.*
Elm † (20)	*Ulmus spp.*
Eucalyptus, bluegum (10)	*Eucalyptus globulus*
Hasardia † (5)	*Haplopappus squamosus*
Hawthorn (2)	*Crataegus spp.*
Hazel (3)	*Corylus spp.*
Hickory (9)	*Carya spp.*
Holly, Florida (11) (Brazilian peppertree)	*Schinus terebinthifolius*
Honeysuckle (1)	*Lonicera spp.*
Hornbeam, American (20)	*Carpinus caroliniana*
Kudzu (12)	*Pueraria lobata*
Locust, black † (20)	*Robinia pseudoacacia*
Manzanita (20)	*Arctostaphylos spp.*

Maple, red † (13)	*Acer rubrum*
Maple, sugar (14)	*Acer saccharum*
Maple, vine † (20)	*Acer circinatum*
Monkey flower † (5)	*Mimulus guttatus*
Oak, black † (20)	*Quercus velutina*
Oak, northern pin (14)	*Quercus palustris*
Oak, post (1)	*Quercus stellata*
Oak, red (14)	*Quercus rubra*
Oak, southern red (7)	*Quercus falcata*
Oak, white † (20)	*Quercus alba*
Persimmon † (20)	*Diospyros spp.*
Poison-ivy (15)	*Rhus radicans*
Poison-oak (15)	*Rhus toxicodendron*
Poplar, yellow † (20)	*Liriodendron tulipifera*
Prunus (7)	*Prunus spp.*
Raspberry (1)	*Rubus spp.*
Redbud, eastern (20)	*Cercis canadensis*
Rose, multiflora (16)	*Rosa multiflora*
Russian-olive (20)	*Elaeagnus angustifolia*
Sage: black (17), white	*Salvia spp.*
Sagebrush, California (17)	*Artemisia californica*
Salmonberry (3)	*Rubus spectabilis*
Salt cedar † (9)	*Tamarix spp.*
Saltbush, sea myrtle (18)	*Baccharis halimifolia*
Sassafras (20)	*Sassafras albidum*
Sourwood † (20)	*Oxydendrum arboreum*
Sumac, poison † (20)	*Rhus vernix*
Sumac, smooth † (20)	*Rhus glabra*
Sumac, winged † (20)	*Rhus copallina*
Sweetgum (7)	*Liquidambar styraciflua*
Swordfern † (20)	*Polystichum munitum*
Tallowtree, Chinese (17)	*Sapium sebiferum*
Thimbleberry (3)	*Rubus parviflorus*
Tobacco, tree † (5)	*Nicotiana glauca*
Trumpetcreeper (2)	*Campsis radicans*
Waxmyrtle, southern † (11)	*Myrica cerifera*
Willow (19)	*Salix spp.*

† Partial control (See below for control or partial control instructions.)

Specific Brush or Tree Control Recommendations:

1. **Alder / Blackberry / Dewberry / Honeysuckle / Oak, Post / Raspberry:** For control, apply 4 1/2 to 6 pints per acre as a broadcast spray or as a 3/4 to 1 1/4 percent solution with hand-held equipment.
2. **Aspen, Quaking / Hawthorn / Trumpetcreeper:** For control, apply 3 to 4 1/4 pints of this product per acre as a broadcast spray or as a 3/4 to 1 1/4 percent solution with hand-held equipment.
3. **Birch / Elderberry / Hazel / Salmonberry / Thimbleberry:** For control, apply 3 pints per acre of this product as a broadcast spray or as a 3/4 percent solution with hand-held equipment.
4. **Broom, French / Broom, Scotch:** For control, apply a 1 1/4 to 1 1/2 percent solution with hand-held equipment.
5. **Buckwheat, California / Hasardia / Monkey flower / Tobacco, tree:** For partial control of these species, apply a 3/4 to 1 1/2 percent solution of this product as a foliar spray with hand-held equipment. Thorough coverage of foliage is necessary for best results.
6. **Catsclaw:** For partial control, apply a 1 1/4 to 1 1/2 percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed.
7. **Cherry, bitter / Cherry, black / Cherry, pin / Oak, southern red / Sweetgum / Prunus:** For control, apply 3 to 7 1/2 pints of this product per acre as a broadcast spray or as a 1 to 1 1/2 percent solution with hand-held equipment.
8. **Coyote brush:** For control, apply a 1 1/4 to 1 1/2 percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed.
9. **Dogwood / Hickory / Salt cedar:** For partial control, apply a 1 to 2 percent solution of this product with hand-held equipment or 6 to 7 1/2 pints per acre as a broadcast spray.
10. **Eucalyptus, bluegum:** For control of eucalyptus resprouts, apply a 1 1/2 percent solution of this product with hand-held equipment when resprouts are 6 to 12-feet tall. Ensure complete coverage. Apply when plants are actively growing. Avoid application to drought-stressed plants.
11. **Holly, Florida / Waxmyrtle, southern:** For partial control, apply this product as a 1 1/2 percent solution with hand-held equipment.
12. **Kudzu:** For control, apply 6 pints of this product per acre as a broadcast spray or as a 1 1/2 percent solution with hand-held equipment. Repeat applications will be required to maintain control.
13. **Maple, red:** For control, apply as a 3/4 to 1 1/4 percent solution with hand-held equipment when leaves are fully developed. For partial control, apply 2 to 7 1/2 pints of this product per acre as a broadcast spray.
14. **Maple, sugar / Oak: northern pin / Oak, red:** For control, apply as a 3/4 to 1 1/4 percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed.
15. **Poison-ivy / Poison-oak:** For control, apply 6 to 7 1/2 pints of this product per acre as a broadcast spray or as a 1 1/2 percent solution with hand-held equipment. Repeat applications may be required to maintain control. Fall treatments must be applied before leaves lose green color.
16. **Rose, multiflora:** For control, apply 3 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Treatments should be made prior to leaf deterioration by leaf-feeding insects.
17. **Sage, black / Sagebrush, California / Chamise / Tallowtree, Chinese:** For control of these species, apply a 3/4 percent solution of this product as a foliar spray with hand-held equipment. Thorough coverage of foliage is necessary for best results.
18. **Saltbush, sea myrtle:** For control, apply this product as a 1 percent solution with hand-held equipment.
19. **Willow:** For control, apply 4 1/2 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment.
20. **Other woody brush and trees listed above:** For partial control, apply 3 to 7 1/2 pints of this product per acre as a broadcast spray or as a 3/4 to 1 1/2 percent solution with hand-held equipment.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. All such risks shall be assumed by buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

(1) Refund of purchase price paid by buyer or user for product bought, or
(2) Replacement of amount of product used.

Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. In no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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Label Code: D02-148-002
Replaces Label: D02-148-001

EPA-accepted 05/15/2002

Revisions:

1. Update of specific uses allowed in the state of California.

LI 700®

PENETRANT • ACIDIFIER • DEPOSITION AID
DRIFT CONTROL AGENT

CONTAINS SOYOIL DERIVATIVE

Principal Functioning Agents:
Phosphatidylcholine, methylacetic acid
And alkyl polyoxyethlene ether.....80%
Constituents ineffective as spray adjuvant.....20%
TOTAL.....100%
CA Reg No 34704-50035
WA Reg No 34704-04007

KEEP OUT OF REACH OF CHILDREN

DANGER

DANGER: Liquid Causes Skin and Eye Injury
Wear eye protection and chemical resistant gloves.

First Aid: If in Eyes: Treat as corrosive. Flush with water for 15 minutes, then get medical attention. **If on Skin:** Treat as corrosive. Remove contaminated clothing. Wash with soap and water. Get medical attention. **If Swallowed:** Call a physician immediately. Drink two (2) glasses of water. Induce vomiting. **If Inhaled:** Remove victim to fresh air; apply artificial respiration if necessary.

General: LI 700 is a non-ionic, low foaming penetrant. LI 700 may be used to enhance the activity and effectiveness of agricultural and industrial chemicals. LI 700 provides more uniform coverage of spray solutions and aids in penetration. LI 700 may be used to acidify (lower pH) of spray solutions thus preventing alkaline hydrolysis of pesticides sensitive to high pH. LI 700 improves deposition and retards drift by producing a more uniform spray pattern. The degree of drift hazard varies with they type of pesticide and application conditions. Common sense and sound application technology must be followed when spraying pesticides. LI 700 will retard, but not eliminate, drift. LI 700 is compatible with most pesticide formulations including water-soluble, flowable and wettable powders. For tank mix compatibility concerns, conduct a jar test of the proposed mixture to ensure compatibility of all components. Mix components in the same ratio as the proposed tank mix. Application may be by ground or air.

Directions for Use: LI 700 may be used on a wide variety of crops including fruits, vegetables, row crops, citrus, small grains, forage crops, vine crops, turf or in non-crop sites. Aquatic (including wetlands), Forestry (site preparation and release), Industrial (storage areas, plant sites, and other similar areas including governmental and private lands), Grasslands (including pastures, rangeland and fence rows), Rights-of-ways (utility, railroad and roadsides), Turf (golf courses, parks, and sod farms), and Ornamentals (container, field or greenhouse). Some pesticides have stated adjuvant use rates. In all cases, the pesticide manufacturer's label should be consulted regarding specific adjuvant use recommendations and that rate followed. Do not add adjuvant at a level that would exceed 5% of the finished spray volume unless otherwise specified by the pesticide label.

Acidifying Agent:
Highly alkaline water (pH 8 or higher) 8 to 16 ounces per 100 gallons of spray mixture.
Mildly alkaline/acid water (pH 6.5 to 8) 4 to 8 ounces per 100 gallons of spray mixture.
NOTE: LI 700 is an acidifier and may be physically or chemically incompatible with alkaline spray materials.

General Use:
Herbicides (terrestrial or aquatic), Defoliants, Desiccants:
- 1 to 4 pints per 100 gallons of spray mixture when used as a penetrant.
- 12 ounces to 2 pints per acre when used in place of crop oil concentrates.

Insecticides, Fungicides, Acaricides, Plant Growth Regulators, Foliar Nutrients:
- ½ to 2 pints per 100 gallons of spray mixture.

Drift Reduction:
- 1 to 2 quarts per 100 gallons of spray mixture.

Non Crop Sites: 1 to 8 pints per 100 gallons (1 to 6 fluid ounces per 5 gallons) of spray mixture.
Turf and Ornamentals: 1 to 4 pints per 100 gallons (1 to 3 fluid ounces per 5 gallons) of spray mixture.

NOTE: This product has demonstrated excellent plant safety; however, not all species of ornamentals have been tested. Before treating a large area, test on a small area and observe prior to full scale application.

Storage: Suggested storage above 40°F. If frozen, warm product before use. Store in cool, dry place. Store in original container. Keep tightly closed. Do not reuse empty container.
Disposal: Do not contaminate water, food or feed by storage or disposal. Wastes may be disposed of on-site

This specimen label is intended for use only as a guide in providing general information regarding the directions, warning and cautions associated with the use of this product. As with any product, always follow the label instructions on the package before using.

or at an approved waste disposal facility. Triple rinse (or equivalent) adding rinse water to spray tank. Offer container for recycling or dispose of container in sanitary landfill, or by other procedures approved by appropriate authorities.

WARRANTY DISCLAIMER AND NOTICE

THE DIRECTIONS FOR USE OF THIS PRODUCT ARE BELIEVED TO BE ADEQUATE AND SHOULD BE FOLLOWED CAREFULLY. IT IS IMPOSSIBLE TO ELIMINATE ALL RISKS INHERENTLY ASSOCIATED WITH THE USE OF THIS PRODUCT. CROP INJURY, INEFFECTIVENESS, OR OTHER UNINTENDED CONSEQUENCES MAY RESULT DUE TO SUCH FACTORS AS WEATHER CONDITIONS, PRESENCE OR ABSENCE OF OTHER MATERIALS, OR THE MANNER OF USE OR APPLICATION, ALL OF WHICH ARE BEYOND THE CONTROL OF LOVELAND PRODUCTS, INC., THE MANUFACTURER OR SELLER.

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