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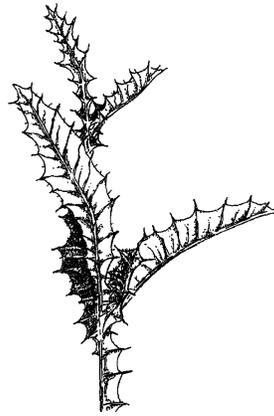
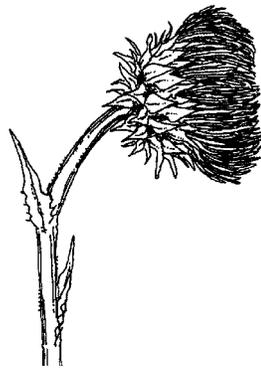
Forest
Service

Southwestern
Region



Summary of the Draft Environmental Impact Statement for the Invasive Plant Control Project

Carson and Santa Fe National Forests in
Colfax, Los Alamos, Mora, Rio Arriba, San
Miguel, Santa Fe, Sandoval and Taos
Counties, New Mexico



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Summary of the Draft EIS

Purpose and Need

This section describes the proposed action (project), purpose and need for the proposed action, public involvement, and issues identified.

Introduction

In northern New Mexico's Carson National Forest and Santa Fe National Forest, more than 7,300 acres of invasive nonnative plant populations (i.e. weeds) are known to impact National Forest System lands. Although this amount represents less than 0.5 percent of the 3 million acres managed by these two forests, weed treatments are most effective when the areas affected are small and before weeds are well established. It is important to control weed infestations at an early stage, before costly large-scale treatments such as aerial spraying become necessary.

This document summarizes the "Draft Environmental Impact Statement for the Invasive Weed Control Project." It provides an overview of the proposed action; the purpose and need for the project; the public involvement effort to date; issue and alternative development; and a summary of the expected effects of alternatives on the human environment.

Proposed Action

The project focuses on controlling invasive plants designated by New Mexico as weeds. These weeds occur on the Forests in various locations. Treatments would begin in 2005. During approximately the next 10 years, each forest anticipates treating 300 to 800 acres per year, based on anticipated funding. As many as 3,000 acres could be treated in a given year (1,500 acres on each forest) if funding permits. The implementation period could extend beyond 10 years if adaptive management monitoring shows the results lie within the expected sideboards.

Activities include eradication or control of weeds that pose a threat along riparian areas, roads, trails, recreation sites, administrative sites, gas/oil pads (and pipelines), and range improvements. Areas of recent disturbance—such as the Ponil Fire complex and other burned areas on the two Forests—will also receive attention. The proposal employs the following methods:

- Hand pulling, grubbing with hand tools or hand operated power tools, mowing and disking, or plowing with tractor-mounted implements;
- Biological control using insects or plant pathogens introduced into the weed habitat;
- Controlled grazing using goats and sheep to intensively and repeatedly graze weeds;
- Herbicide application to weed populations using hand or vehicle-mounted sprayer applications; and
- Prescribed burning using limited pile or broadcast burning to eliminate seed heads and resident populations of weeds.

Cultural plant methods would also be used as a followup treatment. These methods use native or appropriate nonnative plant species to supplant target weed species.

The scope of the proposal includes treatments to existing weed infestations, as well as an adaptive strategy for responding to infestations that have not yet been mapped. The adaptive strategy would evaluate new weed threats and if the effects fall within parameters described in this DEIS, permit immediate treatment. Failure to deal immediately with these new—usually small—infestations is likely to lead to larger scale treatments with greater impacts later.

Purpose and Need for Action

The primary purpose of and need for this project is to protect the abundance and biological diversity of desired native plant communities on the Forests, which in turn will help maintain and enhance wildlife and fish habitats, soil productivity and watershed conditions. This is especially important in the riparian areas and moist valley bottoms where critical habitat exists for many plant and animal species. Without effective control, weeds will increasingly impact natural resources on the Forests in the following ways:

- Native plant communities will become more impacted as weeds gradually take over dominance of these communities. Weeds often form monocultures or greatly simplified ecosystems. Ecosystem processes become degraded, with evidence of slower nutrient cycling and lower hydrological stability. They prove less sustainable when confronted with natural disturbances such as fire. Weeds also threaten the continued existence of certain endangered, sensitive or rare plant species that occur on the Forests.
- Erosion is increased by many weed species. Knapweeds and other weeds have a single, deep taproot and drive out native grasses that have better soil-holding root systems. Native riparian plants including rushes, sedges, willows and cottonwoods maintain streambank stability better than the weed species currently spreading through the Forests' riparian zones.
- Wildlife habitat quality decreases when weeds take over native plant communities. Palatable forage for game and nongame species of wildlife decreases as weeds like thistle, leafy spurge and toadflax take over. Weeds such as black henbane, poison hemlock and yellow starthistle can poison animals. Negative impacts to wildlife magnify in riparian areas because of the important role riparian vegetation plays for a large number of southwestern species. A large percentage of the known weed infestations occur in or near riparian areas.
- Recreation opportunities are lessened when dense weed infestations limit access to streams and riparian areas. Weed species with sharp thorns and stiff stems are reducing the quality of some recreation sites for picnicking and camping purposes. Some weeds cause allergies or skin irritations. Scenic values and wilderness characteristics also typically decline as weeds reduce the abundance and diversity of native plant communities.
- Culturally important plants such as osha, wild spinach, willow, and purslane would decline where weed invasions occur. Because many of the weeds occur near roads and trails, the ability to readily collect those plants would become more limited.
- Wildland fires are known to burn more intensely and severely in areas where weed species like salt cedar, Siberian elm and Russian olive have taken over native riparian ecosystems.
- Weeds primarily occur in the following locations (based on percent of inventoried weed infestations totaling approximately 7,350 acres):
 - o Riparian areas and valley bottoms: 55 percent
 - o Scattered patches and along low-level roads and trails: 19 percent
 - o Major road corridors and recreation sites: 14 percent
 - o In or along access into wilderness: 12 percent

In terms of current weed species distribution, the most dominant weed species are the nonnative thistles, followed by the valley bottom species of salt cedar, Siberian elm, and Russian olive. The table below shows the weed species distribution by percent of inventoried weed infestations.

Table 1. Weed Distribution by Species

Thistles (biennials and perennials)	67%
Salt cedar and Siberian elm	28%
Knapweed	3%
Toadflax	2%
Hoary cress, field bindweed, leafy spurge and poison hemlock	<1%
Perennial pepperweed, black henbane, and yellow starthistle	<0.5%

Public Involvement and Issues

In 1996-1997, the Forests met with other Federal, State and county land management agencies to discuss the threat of weeds. From 1998-2000, the weed control proposal was developed and various methods were used to inform and involve the public about the proposed project. These included a newspaper supplement, public meetings held in Taos and Española, and a scoping letter sent to approximately 450 individuals, agencies, tribal governments and organizations to inform them about the proposal. At that time, the Forests were conducting independent environmental assessments of similar proposals. As a result of the March 2000 scoping efforts, a decision was made to combine the environmental analysis efforts of the two forests and write a single EIS. In December 2000, the Forests sent another scoping letter and published a Federal Register notice of intent to prepare an EIS. At the request of local citizens, a public field trip was conducted to discuss and visit weed impact sites on the Tres Piedras Ranger District of the Carson National Forest.

Issues were identified from comments received during scoping. The primary issues revolved around concerns about how herbicides might affect human health, wildlife, fish and desired plant communities. On the other hand, there was an important concern that where non-herbicide methods were used, there would be less effectiveness and the potential for weeds to spread at a faster rate than they can be controlled. As they become more dominant on the landscape, they have greater resource impacts and become more costly and difficult to treat in the long run.

Alternatives Considered in Detail

This section summarizes the four alternatives considered in detail in the DEIS, the adaptive management strategy, treatment objectives and decision criteria, mitigation and monitoring requirements, and associated Forest Plan amendment.

Alternative A - No Action. This is the baseline for comparing the other alternatives and is the alternative where proposed weed control actions would not occur on the Forests. Weed control would be limited to those actions previously approved on the Forests and those conducted by other jurisdictions and landowners in and around the Forests.

Alternative B - Integrated Strategy. This is the agency’s proposed action as previously described, developed to fully meet the purpose and need for action while minimizing the risk of adverse impacts through mitigation measures and monitoring requirements.

Alternative C - No Herbicides. This alternative eliminates herbicide use and was developed in response to public concerns raised about potential effects of herbicides on human health, fish/wildlife, and nontarget native vegetation.

Alternative D - Herbicides Only. This alternative exclusively relies on herbicides and was developed in response to the cost effectiveness issue associated with proposed non-herbicide treatments.

All action alternatives would employ the adaptive strategy to provide for timely response to newly discovered weed infestations, as well as changes to treatment methods as technology advances or as monitoring results indicate a need for change.

Adaptive Strategy

The action alternatives employ an adaptive strategy—especially Alternative B, but Alternatives C and D to a lesser extent. Using this adaptive strategy, weed treatments would be monitored, evaluated and modified as necessary to improve effectiveness of future treatments and/or reduce the potential for adverse effects to people and natural resources. This strategy also allows for applying the same weed control treatments to new weed infestation sites as long as the actions and effects (including decisionmaking criteria and limitations on treatments) are within the scope of the EIS and Record of Decision.

While Alternatives C and D would also employ the adaptive strategy, changes in methods would be limited to the nonherbicide or herbicide-only methods (respectively). For those two alternatives, methods could be slightly modified as needed to improve efficiency or reduce negative impacts, such as by altering the timing, equipment, herbicide type or application rate. The adaptive strategy would also be used to treat newly discovered infestations.

The adaptive strategy would cover weeds found in additional locations as well as new species found on the Forests. The Forests propose an adaptive strategy with the following actions:

- Annually inventory portions of the Forests that are likely to have new infestations (e.g. areas burned by wildfires or recently disturbed) and map new weed infestations. Budgets will govern the extent of these inventories.
- Identify the weed treatment objective, priority and methods to use for newly mapped infestations, based on the specific criteria described in the DEIS.
- Monitor the effectiveness and effects of weed treatment activities and associated mitigation measures.
- Evaluate and disclose monitoring results, and use those results to determine appropriate modifications in treatment prescriptions, mitigation measures or implementation practices.
- Implement modifications or other feasible and appropriate treatment methods based on monitoring results, as long as the action and its effects are considered by an interdisciplinary team and determined by the responsible official to be within the scope of actions and effects evaluated in the EIS (in accordance with Forest Service Handbook FSH 1909.15, Sec.18).

Treatment Objectives and Decision Criteria

Specific treatment objectives for a given weed species fall into one of the following categories:

- Eradication (elimination)
- Control (reducing the population over time)
- Containment (preventing the population from spreading).

Eradicating or controlling every weed infestation in 1 or 2 years is beyond the budget and personnel resources of the two forests. Therefore, a system for setting priorities is proposed so that treatment concentrates on species that have the greatest impact on the resource base, and those that become more difficult to control if action is delayed. Weeds become much more difficult to control once they have spread. Thus, the highest priority is to eradicate new species occurrences on the Forests, and then to keep existing populations from spreading or increasing in size.

In addition, new weed infestations found in the following locations would be considered for a possible elevated priority ranking:

- Areas that are now relatively weed free and have little or no road access, such as areas designated as wilderness, roadless recreation or semi-primitive non-motorized, including the road corridors and trails that lead to those areas;
- Areas that are now relatively weed free that provide unique and desirable wildlife habitat, such as recovery habitat for threatened or endangered species, deer and elk winter range; and riparian habitat;
- Areas on the Forests with weed populations adjacent to other land ownerships where land managers have active weed control programs;
- Areas of high human use, including but not limited to administrative sites, developed recreation sites such as campgrounds, scenic viewpoints, interpretive sites, and trailheads.

Schedules for implementing weed treatments would be based first on the priorities just described, and spread out over time based on levels of funding and staffing on the Forests.

Selection of treatment method is based to a large extent on the priority ranking of the weed species and the objective for a particular site, which is dictated by factors such as proximity to water or roads (which increases chance of spread), and the size of the weed infestation (small sizes are easier to eradicate).

In addition to using treatment objectives, priority rankings, and infestation size, other specific site conditions would prescribe treatment method limitations. Where present, these conditions will dictate use of methods that have a low risk to the resource factor of concern:

- Areas of high human use such as a recreation site, administrative site, or area where people often collect plants.
- Areas with a shallow water table (less than 6 feet deep) and soil with a high permeability rate, where there may be a risk of an herbicide leaching through the soil to the ground water.
- Riparian areas or next to live water bodies containing aquatic species (fish and insects).
- Presence or proximity of threatened, endangered or sensitive plant species.

- Presence or proximity of threatened, endangered or sensitive wildlife species.
- Wilderness and designated non-motorized areas.

Mitigation and Monitoring

The DEIS lists mitigation measures and monitoring requirements for all action alternatives. The mitigations were developed specifically for this project in order to avoid or minimize the risk of adverse project-related impacts to people or natural resources on the Forests, including potential impacts to human health and safety, native plants, special status plants or wildlife, soil, water, riparian and aquatic resources, and heritage resources. The bullets that follow summarize mitigation measures that are described in more detail in the DEIS.

- **Human Health/Safety and General Mitigations:** These govern herbicide application and use, public notification, traffic control, and other health/safety protection measures.
- **Native Vegetation and Treatment Effectiveness:** These direct the treatments so that they have a minimal impact on native vegetation. They include cleaning equipment, revegetation (or mulching as appropriate), and use of proper seed to revegetate.
- **Threatened, Endangered and Sensitive Plants:** These require survey and/or avoidance of occupied habitat. For Holy Ghost ipomopsis (the only Federally listed species in the project area), buffers apply to treatments such as grazing, mowing, prescribed burning and spraying herbicides.
- **Wildlife, Including Threatened, Endangered and Sensitive Species:** Depending on the level of protection required by law, regulation and policy, these measures require surveys and/or avoidance, and use of seasonal restrictions to reduce impacts during breeding periods. For example, controlled grazing with sheep or goats is prohibited in Rocky Mountain bighorn sheep habitat.
- **Air, Soil, Water, Riparian and Aquatic Resources:** These measures restrict types of treatments in certain places, such as slope restrictions for mechanical treatments and herbicide use restrictions near water or high water table locations. Although most herbicides would be permitted near water if registered for such use by the EPA, no direct application of herbicide to water (e.g. for aquatic plants) is permitted as part of this project. Procedural restrictions also apply. These include complying with smoke management for prescribed burns, and evaluating watersheds for total herbicide use before proceeding. Potential for accidental spills of herbicides, gasoline or other chemicals associated with treatments would be minimized by restrictions on where these chemicals can be handled. Spill prevention and cleanup plans and other established procedures also reduce the impacts to soil, water, and aquatic resources.
- **Heritage Resources:** A programmatic agreement among the Forests, State Historic Preservation Office and Advisory Council was developed for this project to ensure that heritage resources would be protected in accordance with applicable law, regulation and policy. The programmatic agreement spells out the requirements for conducting heritage resource inventories and evaluations for this project prior to implementation. It requires development of appropriate mitigation measures to avoid adverse impacts to heritage resources. Measures include limiting use of vehicles and other machinery that could disturb soil in sensitive areas, limiting herbicide use near certain sites, limiting controlled grazing near certain sites, and avoiding controlled fire within certain sites. Tribal consultation and pretreatment notification is included as an essential element. It describes

- requirements for consultation with the State and application of additional mitigation measures if adverse impacts cannot be avoided while meeting project objectives.
- **Monitoring and Adaptive Management:** Weed inventories and mapping will be conducted annually. Treatment of newly found populations will be identified and prioritized. Treatments will be monitored for effectiveness and effects to other resources. If the treatments initially prescribed in the EIS are not effectively meeting the given treatment objective, another method may be used as long as the action and effects are within the scope of effects considered in the EIS. The evaluation and decision by the responsible official regarding consistency with the EIS will be documented in the project record.

Forest Plan Amendment

Alternatives B and D would require an amendment to the Santa Fe National Forest Plan in order to be approved as written. These alternatives propose use of herbicides in places and under conditions that were not foreseen when the existing Forest Plan standards and guidelines were developed. The Forest Plan (page 76) currently prohibits herbicide use within municipal watersheds, in areas of human habitation, on soils with low regeneration potential or less than moderate cation exchange capacity (USDA FS 1987). The proposed amendment would modify these standards in order to allow herbicides to be used where necessary in those situations, with specific limitations. The Santa Fe National Forest Plan also prohibits herbicide use if an environmental analysis shows that it is not “environmentally, economically or socially acceptable,” which is an ambiguous standard and subject to variable interpretations. The amendment would modify that standard so it is more consistent with environmental analysis requirements under NEPA.

To meet the purpose and need for this project and protect ecosystem diversity and sustainability in the long term, it may be necessary to occasionally apply herbicides within those areas if they are infested with weed populations that cannot be effectively treated with other methods. The proposed amendment would continue to maintain adequate protection for municipal watersheds, soil productivity, and human health and safety. For instance, soil erosion rates would still be required to remain within tolerance levels based on the Terrestrial Ecosystem Survey data, in order to maintain long term soil productivity. The Forest Plan standard regarding cation exchange capacity is outdated and would be deleted from the Forest Plan, as that measurement is no longer used by the Forest Service. Table 2 uses *italics* to show the specific language changes in Forest Plan direction.

Table 2. Proposed Santa Fe National Forest Plan Amendment

Existing Forest Plan Direction	Proposed Forest Plan Direction
<p>Chemical treatments may be applied:</p> <ul style="list-style-type: none"> - When determined through an environmental analysis to be environmentally, economically, and socially acceptable. - On areas outside municipal watersheds and areas of human habitation. - On soils with moderate or high revegetation potential. 	<p>Chemical treatments may be applied:</p> <ul style="list-style-type: none"> - When determined through an environmental analysis to <i>have no long-term adverse environmental, economic, or social impacts.</i> - <i>Within municipal watersheds only when the municipality concurs with the proposed treatment prescription and mitigation measures to be implemented.</i> - <i>On any soils provided that effective ground cover is quickly restored and soil erosion on that site is not reduced to below the tolerance level identified in the Terrestrial Ecosystem Survey for the affected soil unit.</i>

Environmental Consequences and Comparison of Alternatives

This section provides a comparative summary of the alternatives in terms of the most significant issues or effects anticipated, based on the analysis in the DEIS. The DEIS describes the affected environment and environmental consequences, including analysis methods, in detail.

Environmental Consequences Summary

The most noticeable consequences from weed treatment Alternatives B, C, and D would be the long-term beneficial improvements to native ground vegetation such as grasses, forbs and shrubs. Riparian vegetation such as rushes, sedges, willows and cottonwoods would particularly benefit from this project. Protecting and improving native plant communities would have positive effects on soil and water conditions, as well as wildlife and aquatic habitats (particularly due to enhancing riparian vegetation).

Negative effects to native vegetation, soil, water and aquatic organisms would be minor and of short duration. The minor, short-term increases in sediment (more with Alternative C) and herbicide delivery to streams (Alternatives B and D) would have no significant consequences. There would be a low risk of adverse impacts to fisheries, including Rio Grande cutthroat trout (a sensitive fish species) or other aquatic organisms based on application of mitigation measures, risk assessment and EPA guidelines, and maintaining herbicide levels well below impact thresholds established in the analysis for each watershed. Alternative C would cause more ground disturbance and associated impacts to soils, especially on soils with severe erosion hazard rating. However, all alternatives would remain with soil erosion tolerance levels needed to protect long-term soil productivity. Soils with low revegetation potential would receive herbicide treatments in Alternatives B and D, while reestablishing native vegetation would take longer under Alternative C. Mitigation requirements for all alternatives would ensure that vegetative ground cover is adequately reestablished. With the required mitigation measures, all soil and water quality standards would be met.

Differences between alternatives in their effects to air quality, heritage resources, livestock grazing, recreation, wilderness and visual resources were expected to be negligible, such that they would not be given weight in the decisionmaking process. There would be minor increases in noise and traffic, although generally within background levels.

By controlling the spread of weeds and protecting native plant communities, habitats and watershed conditions on the Forests, Alternatives B and D would maintain or enhance social or economic conditions, particularly for local rural communities in northern New Mexico who typically rely on the Forests' natural resources for their livelihood, traditional culture and quality of life.

Comparison of Alternatives

The alternatives are compared in terms of the significant issues, as well as how well they meet the purpose and need (objectives) for the project. Table 3 provides the comparison of alternatives, based on the detailed environmental analysis documented in the DEIS. The comparison table is intended to provide a clear basis for choice between alternatives.

Table 3. Comparison of Alternatives by Issues and Objectives (Purpose and Need)

Significant Issues and Objectives	Alternative A	Alternative B	Alternative C	Alternative D
Issue 1: Herbicides and Human Health	No risk of health impacts from herbicide exposure (0 acres treated with herbicides).	Low risk of health impacts from using herbicides, to workers or general public, based on EPA ratings, risk assessments and other mitigation measures. Higher risk to people with multiple chemical sensitivities, although public notification requirement allows for avoidance of treated areas. Approx. 70 percent of treatments include herbicides (5,150 acres).	No risk of health impacts from herbicide exposure (0 acres treated with herbicides). Slightly increased risk of exposure to smoke from prescribed burning.	Same as Alt. B but slightly higher risk of exposure for people with chemical sensitivities. One hundred percent of treatments include herbicides (5,435 acres).

Significant Issues and Objectives	Alternative A	Alternative B	Alternative C	Alternative D
Issue 2: Herbicides and Wildlife	No risk of herbicide impacts to wildlife. Weeds would degrade native plant habitats, especially riparian areas important to numerous species.	Low risk of herbicide impacts to wildlife based on EPA ratings, risk assessment, and mitigation measures. Native wildlife habitat quality (especially riparian habitat) would improve as weeds are eradicated and controlled.	No risk of herbicide impacts to wildlife. Less improvement in wildlife habitat.	Same as Alt. B
Issue 3: Herbicides and Native Plant Communities	No short-term impacts from herbicides. In the long term, weed-caused decline in abundance and diversity of native plant communities, especially native riparian plants.	Short-term reduction in some nontarget plant species. Long-term improvement in abundance and diversity of native plant communities, especially riparian plants.	Similar short-term reduction in nontarget plants. Low to moderate long-term improvement in native plant communities. Weed spread rate may equal or exceed control rate without herbicide use.	Same as Alt. B
Issue 3: Continued-Rare or Sensitive Native Plant Species	No risk of treatment-related impacts. In the long term, weeds may cause a decline in Federally listed or sensitive plant species.	No impact to threatened or endangered plants due to mitigation measure. For sensitive plants, treatments “may impact individuals but are not likely to result in a trend toward Federal listing or loss of population viability,” due to mitigation measures and species locations.	Same as Alt. B	Same as Alt. B

Significant Issues and Objectives	Alternative A	Alternative B	Alternative C	Alternative D
Issue 4: Cost and Treatment Effectiveness (based on level of effort to meet objectives)	No cost effectiveness. Would incur much higher costs in future.	Moderately cost effective; \$1,313,000 relative cost.	Least cost effective; \$1,585,000 relative cost.	Most cost effective; \$550,000 relative cost.
Objectives: Protect native plant communities, soil and water quality, wildlife habitat, and long-term ecosystem health	No protection; no effectiveness. Weed-related impacts to vegetation, soil, water, riparian habitat, etc. would continue.	Highest level of treatment effectiveness and resource protection from weed impacts due to combination of treatments including herbicides.	Lowest level of effectiveness and resource protection from weed impacts. Fewer acres treated annually for a given budget due to need for repeat treatments on the same acreage.	High level of effectiveness and resource protection from weed impacts. Not quite as effective as herbicides combined with other methods.

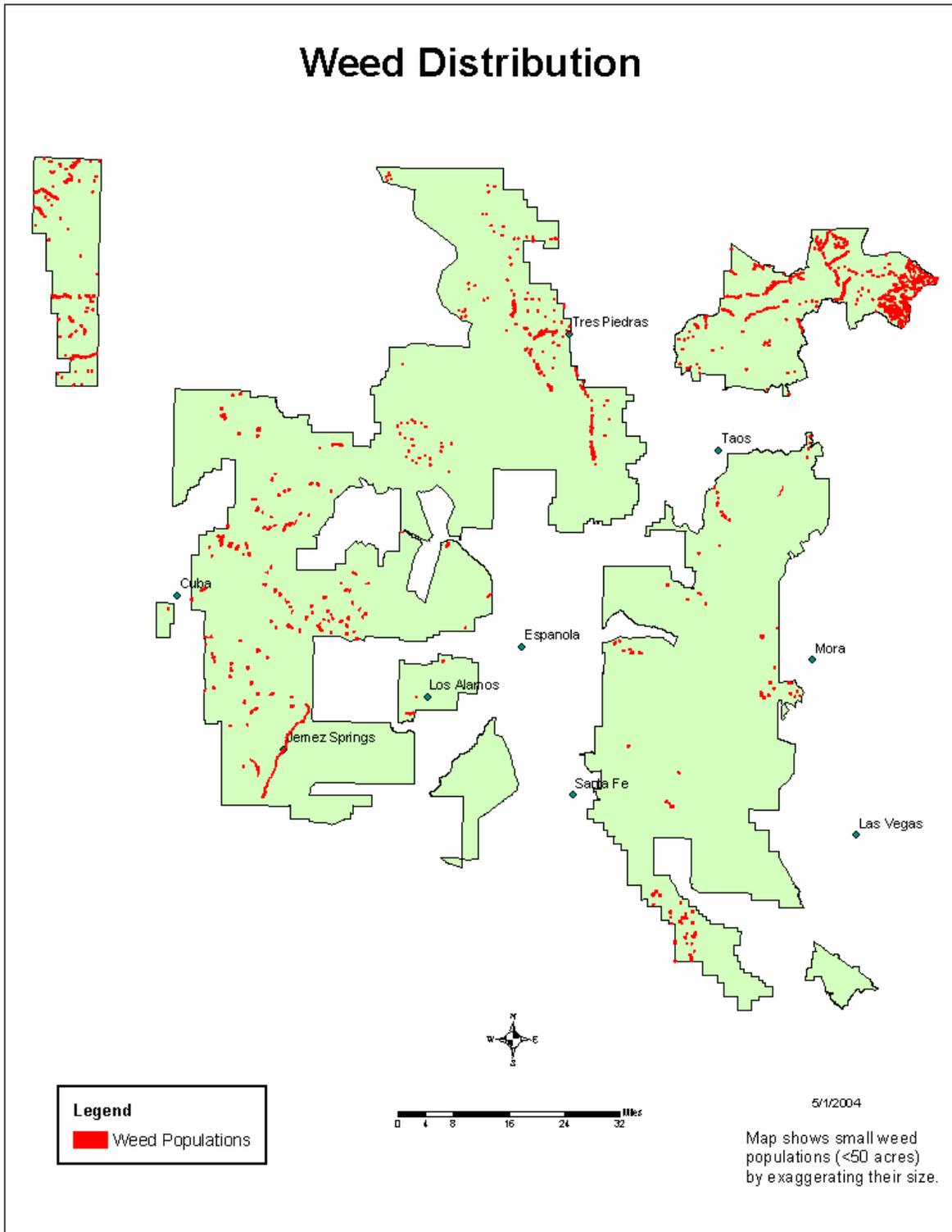


Figure 2. Weed Distribution

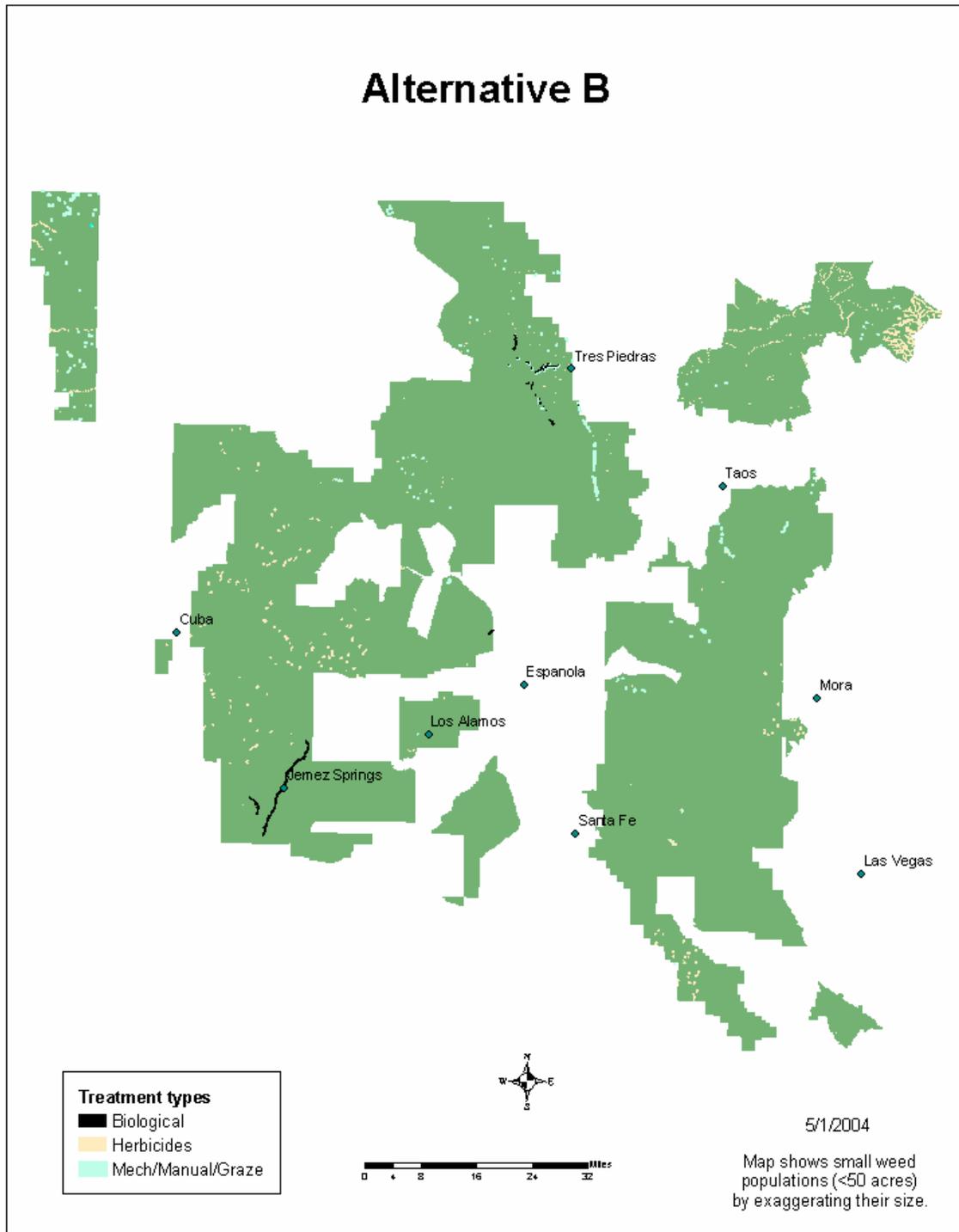


Figure 3. Alternative B

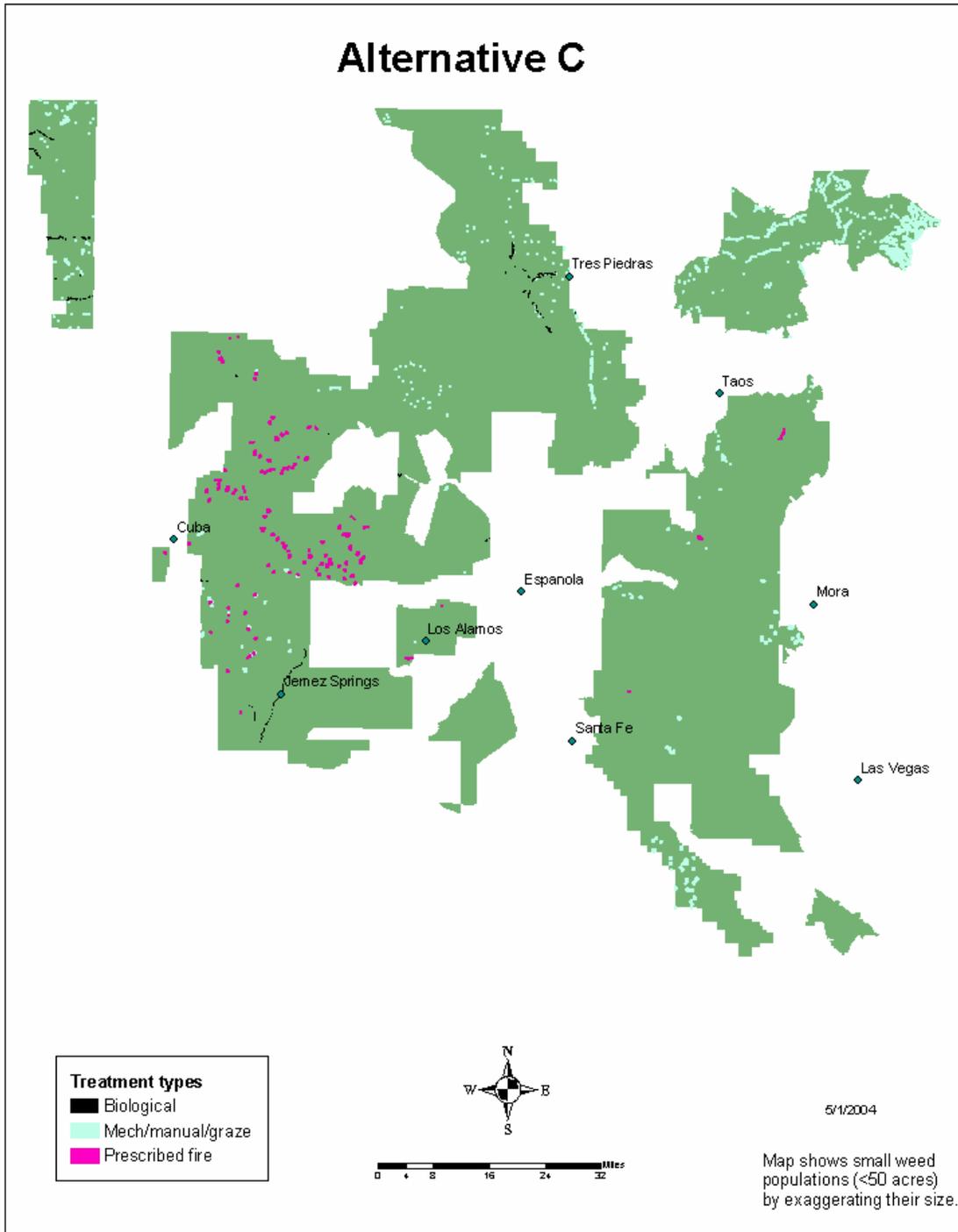


Figure 4. Alternative C

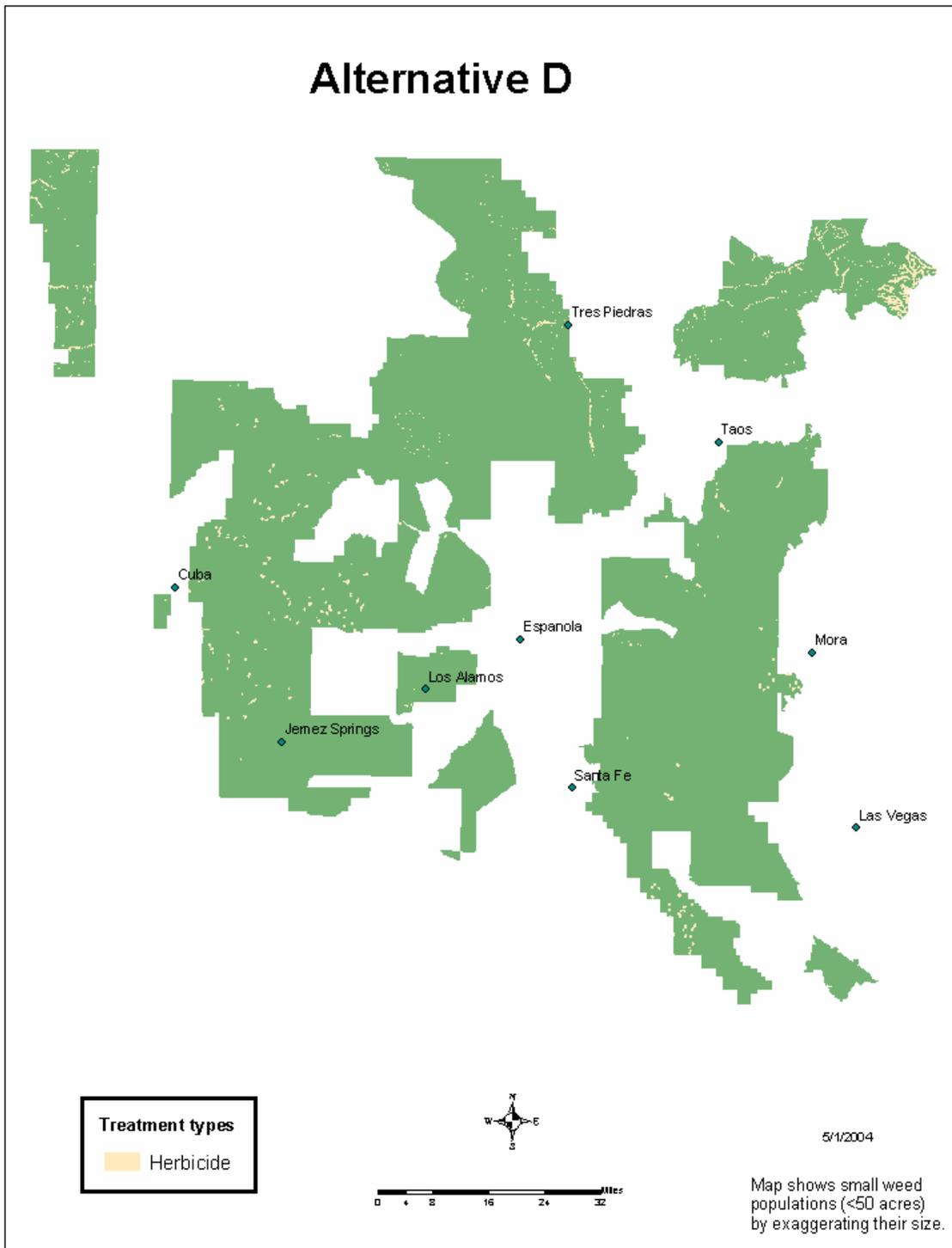


Figure 3. Alternative D