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Department of
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Environmental Assessment

CLAY PHACELIA INTRODUCTION PROJECT

Spanish Fork Ranger District, Uinta National Forest
Utah County, Utah

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SUMMARY

The Uinta National Forest proposes to cooperate with the U. S. Fish and Wildlife Service and other organizations in introducing populations of the endangered clay phacelia plant. This will be done by planting seedlings and/or seeds in up to 13 locations involving up to 13 acres within suitable habitat on the National Forest. The project area is located in the Spanish Fork River watershed, between Water Hollow and Tie Fork, and is within the Spanish Fork Ranger District, Uinta National Forest, Utah. This action is needed, because the species' viability is endangered, and the Endangered Species Act calls on all federal agencies to work toward recovering viability of listed species.

The proposed action is likely to greatly reduce chances that the clay phacelia, a federally listed Endangered plant, would go extinct.

In addition to the proposed action, the Forest Service also evaluated the following alternatives:

No Action – Do not authorize establishment of clay phacelia populations back onto the suitable habitat on the Uinta National Forest.

Based upon the effects of the alternatives, the responsible official will decide:

-- Whether to approve any introduction of clay phacelia on the Uinta National Forest.

-- If any phacelia populations are to be introduced, where and under what conditions the population(s) would be located.

INTRODUCTION

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four parts:

- *Introduction:* The section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Comparison of Alternatives, including the Proposed Action:* This section provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes possible mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- *Environmental Consequences:* This section describes the environmental effects of implementing the proposed action and other alternatives. Within each section, the affected environment is described first, followed by the effects of the No Action Alternative that provides a baseline for evaluation and comparison of the other alternatives that follow.
- *Agencies and Persons Consulted:* This section provides a list of preparers and agencies consulted during the development of the environmental assessment.
- *Project Record:* The project provide more detailed information to document the progress and support the analyses presented in the environmental assessment. It is located at the Uinta National Forest Supervisor's Office.

Background

Clay phacelia *(Phacelia argillacea)* is a very rare herbaceous wildflower that is listed as endangered under the Endangered Species Act. It is currently known from only two sites in steep, barren Green River shale hillslopes, on private lands near Highway 6 in Utah County. The two sites are about six miles apart, but apparently identical habitat occurs for hundreds of acres on private and National Forest System lands around the known sites (Harper and Armstrong, 1992). The species was also found in locations in Wasatch County in 1883 and 1894, about seven miles from the nearest current site. Botanical surveys since the 1980s have not found the species at the historic sites or any other locations in either county (Harper and Armstrong, 1992). Surveys of the known sites have rarely found more than 200 plants combined in a year. Often populations have numbered only 10 to 15 plants per year. 2004 is apparently a good year for the species,

however, with over 100 observed at one of the sites. Observations since the 1970s have documented loss of plants from construction activities, trampling by sheep and being eaten by rodents (USFWS 1982).

Figure 1. Clay phacelia and Green River shale habitat.

The species was listed as "Endangered" under the terms of the Endangered Species Act (ESA), in 1978. A recovery plan for clay phacelia was signed in 1982. It calls for establishment of one or more additional populations in protected habitat, and increasing yearly plant numbers to at least 2,000. No critical habitat has been designated for this species.

ESA-listed plant species are not granted the same protections on private land that listed animal species are. Private landowners are not required to protect listed plants.

About 800-1,000 clay phacelia seeds have been collected for potential use on this project, and another 200 seeds are stored at a facility in Fort Collins, CO (Lewinsohn, 2004).

Purpose and Need for Action

The purpose of the proposal is to comply with the Endangered Species Act's mandate to federal agencies to assist in actions to recover and de-list threatened and endangered species. The need is based on the contraction of the clay phacelia species' historic range into the current two sites, the availability of relatively protected suitable habitat on the Uinta National Forest, and the request by the U. S. Fish and Wildlife Service for assistance in recovering this species (Maddux, 2004).

Forest Plan goals G-2-6, 13 and 14 state the Uinta N. F.'s intention to cooperate with the U. S. Fish and Wildlife Service in recovery of ESA-listed species, and clay phacelia specifically (LMP pages 2-5, 2-6).

Proposed Action

The U. S. Fish and Wildlife Service is seeking cooperation with the Uinta National Forest in establishing one or more populations of the clay phacelia on suitable habitat on National Forest System lands. Thirteen possible sites have been identified for this analysis. They are located in Sections 7, 11, 17 and 18, Township 10 South, Range 6 East, on the Spanish Fork Ranger District, located about 23 miles southeast of Spanish Fork, near Highway 6 between the Water Hollow and Tie Fork areas, in Utah County (see map). All the sites are located on steep barren slopes and rock outcrops derived from Green River shale. For purposes of this analysis each site is considered to be one acre, but the actual planting at any site would cover only a fraction of that area.

The proposed action is to plant greenhouse-grown and hardened seedlings, and/or seeds of clay phacelia on each selected site, with the goal of establishing permanent, self-sustaining populations of the species. Fifty or more plants would be set out per site, plus 100-200 seeds. The young rosette-stage plants would be planted in the fall to avoid drying out. Plants would be watered in, with water carried up to the sites. Seeds would be covered with native soil to a depth recommended by species experts. Seeds would be either collected from the wild by landowner permission and with USFWS permits, or seeds of plants produced from wild-collected seed.

Given that there are few other uses made of these steep slopes, no protection other than possible caging to prevent rodent and other wildlife grazing is being planned for the plants.

Clay phacelia seeds for potential use in this project have been collected. Production of the seedlings will be done by the US Forest Service's Shrub Sciences Laboratory in Provo.

Decision Framework

Given the purpose and need, the deciding official reviews the proposed action and the other alternatives in order to make the following decision:

- Whether to approve any introduction of clay phacelia on the Uinta National Forest.
- If any phacelia populations are to be introduced, where the population(s) would be located.

The deciding official will not be making decisions regarding management of populations or management of suitable habitat off of National Forest System (NFS) lands.

Public Involvement

The proposal was listed in the May and July of 2004 Editions of the *Uinta National Forest Schedule of Proposed Actions*. The proposal was provided to the public and other agencies for comment in a scoping letter dated July 6, 2004. In addition, as part of the

public involvement process, the agency published a legal notice requesting scoping comments on July 11, 2004. Two comment letters were received.

Using the comments from internal scoping and the two comment letters, the interdisciplinary team developed a list of potential issues.

Issues

Significant issues are defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues are identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, "…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)…"

The Forest Service identified no significant issues raised during scoping. Several potential non-significant issues were identified. These follow:

- **Conflict with Highway 6 construction?** The proposed project areas lie in close proximity to U.S. Highway 6. Utah Department of Transportation (UDOT) has been engaged in a series of projects to improve the highway. The concern was whether the plantings would restrict operation, maintenance, and ongoing or future highway improvement projects?

- **Conflict with water rights/developments or water yield and quality?** Utah State Engineers data indicates that some of the proposed planting sites are potentially located near designated points of water diversion or use (i.e. water rights). The concern was that the project may impact water yield, water quality, and/or maintenance and exercise of these water rights.

- **Conflict with livestock grazing?** Much of the Spanish Fork Ranger District lies within active grazing allotments. The concern was that the success of the proposed planting would be compromised by livestock grazing or trailing, or that the proposed planting would mandate a change in established grazing management/use.

- **Conflict with recreation and other human uses?** The Uinta National Forest, receives a large amount of recreational use. Spanish Fork Canyon has excellent access via Highway 6, and receives considerable recreation use. Forest Service Road #0725, which runs along the bottom of the Tie Fork drainage, is a designated ATV route and accesses the Tie Fork trail (#0723), which is part of the Great Western Trail. The interdisciplinary team (IDT) considered whether the success of the proposed planting would be impacted by this recreational use, or would necessitate a change in recreation management and adversely impact recreational opportunities.

- **Effects on other species of flora and fauna, including threatened, endangered or sensitive (TES) species?** The IDT considered whether the planting, or

resulting management of the planting and/or the surrounding area, may impact other species of flora and/or fauna. Several TES species are known to use/inhabit the Spanish Fork River drainage.

- **Effects on potential future fire suppression efforts and/or fuels management projects?** The IDT considered whether the new establishment of a listed species may adversely impact fire suppression and/or fuels management projects in the area.
- **Effects on heritage resources?** Spanish Fork Canyon is known to have several heritage sites. The concern is that the plantings may disturb heritage resources.
- **Effects on visual quality, particularly from Highway 6?** Highway 6 is a major highway, and is heavily used by recreationists and others who value the scenic quality there. The IDT considered whether the disturbance associated with the planting, or changes in vegetation caused by the plantings, may adversely affect visual quality.

In response to a request for scoping input and comment on the Proposed Action, the Forest Service received two comment letters. One was from UDOT, and the other was from HDR Company, a contractor for UDOT. Both addressed a concern about whether three of the sites would conflict with construction along Highway 6. UDOT Regional Engineer John Higgins met with Ecologist Denise Van Keuren on August 11, 2004, comparing maps. They concluded construction had already been completed on the highway stretch concerned, so there was no conflict. See documentation of this meeting in the project file (Van Keuren, 2004).

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes and compares the alternatives considered for the clay phacelia introduction project. It includes a description and map of each action alternative considered. This section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. Some of the information used to compare the alternatives is based upon the design of the alternative (i.e., the specific location of the proposed planting sites) and some of the information is based upon the environmental, social and economic effects of implementing each alternative (i.e., the amount of erosion predicted to occur).

Alternatives

Alternative 1

No Action

Under the No Action alternative, current management plans would continue to guide management of the project area. No clay phacelia species introduction activities would be implemented on the Uinta National Forest.

Alternative 2

The Proposed Action

The proposed action is to plant greenhouse-grown and hardened seedlings, and/or seeds of clay phacelia on each selected site, with the goal of establishing permanent, self-sustaining populations of the species. Fifty or more plants would be set out per site, plus 100-200 seeds. The young rosette-stage plants would be planted in the fall to avoid drying out. Plants would be watered in, with water carried up to the site. Seeds would be covered with native soil to a depth recommended by species experts. Seeds would be either collected from the wild with landowner permission and under USFWS permits, or seeds of plants produced from wild-collected seed.

Thirteen possible sites have been identified. They are located in Sections 7, 11, 17 and 18, Township 10 South, Range 6 East, on the Spanish Fork Ranger District, located about 23 miles southeast of Spanish Fork, near Highway 6 between the Water Hollow and Tie Fork areas, in Utah County (see map). All the sites are located on steep barren slopes and rock outcrops derived from Green River shale. For purposes of this analysis each site is considered to be one acre, but the actual planting at any site would cover only a fraction of that area.

Given that there are few other uses made of these steep slopes, no protection other than possible caging to prevent rodent and other wildlife grazing is being planned for the plants.

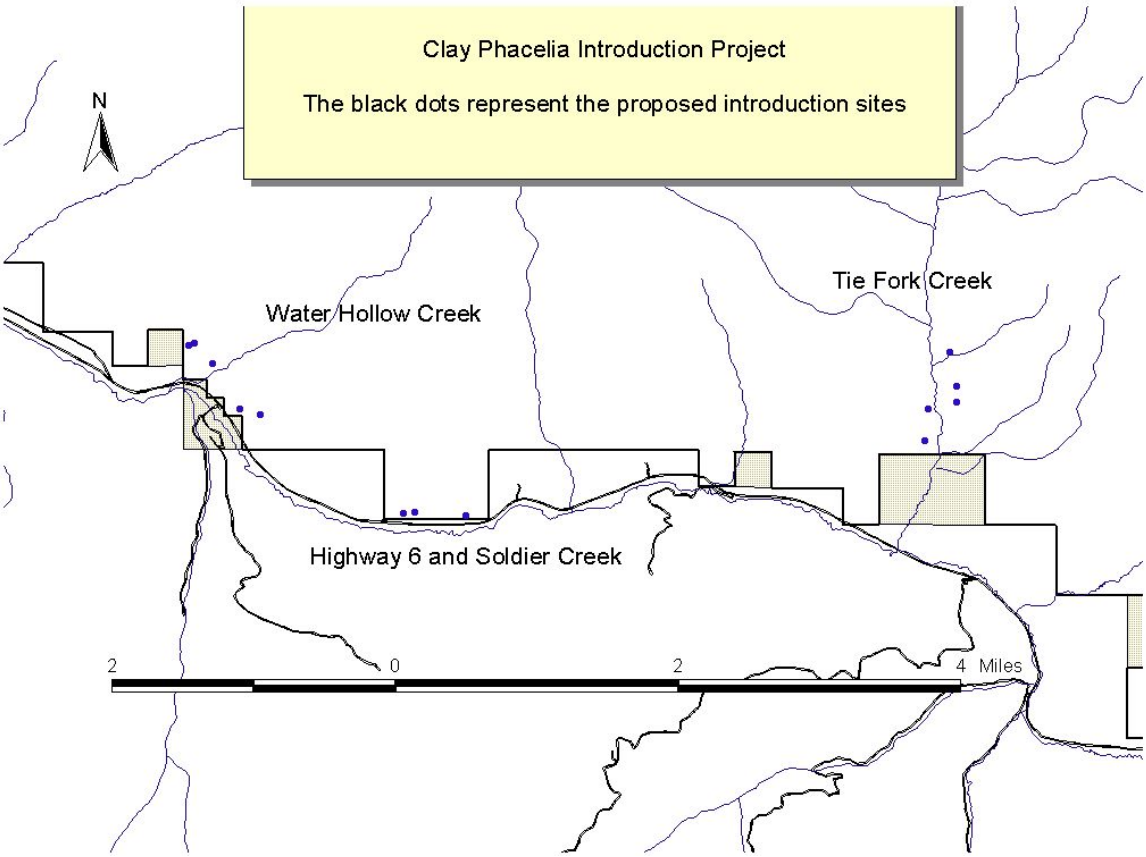

Figure 2: Overview of Proposed Clay Phacelia Introduction Sites, Alternative 2
(Diagram of southern boundary of Uinta National Forest. Shaded areas are private land.)

Mitigation to the Action Alternative

In response to internal concerns, a mitigation measure was developed to ease potential impacts the action alternative had potential to cause.

Table 1: Mitigation Actions.

CONCERN	MITIGATION
Conflicts with the exercise of valid existing water rights	In project design, the 13 proposed planting sites were located well away from streams and all water developments.
Conflicts with highway or utility corridor operation, maintenance or improvement.	In project design, the proposed planting sites were selected to avoid these corridors.

Sheep moving through the area could trample the plants.	In project design, the proposed planting sites were located out of actively grazed areas and out of the main livestock driveway. If monitoring indicates grazing and/or trampling are a problem, then the plantings will be fenced or caged.

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in the table is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Table 2: Comparison of Alternatives.

	Alternative 1 No Action	Alternative 2 Proposed Action
Effect on Clay Phacelia species?	No Effect on existing populations. There would be fewer populations and individuals, and therefore, the risk to the species would remain high.	Beneficial if successful. No effect on existing populations if unsuccessful in starting new populations
Conflict with Highway 6 construction?	None.	None. The proposed sites lie outside the highway corridor and would not impact or be impacted by maintenance, operation, or projected improvements to Highway 6.
Conflict with water rights/developments or water yield and quality?	None.	None. Water developments occur in the vicinity of, but not within or adjacent to the project areas. The project would cause negligible disturbance and erosion, and no impact on water yield, water quality, or water developments.
Conflict with livestock grazing?	None.	None. The project areas lie within areas closed to grazing. Sheep are trailed along the bottom of Tie Fork Canyon in June, October,and occasionally other times. The planting sites here were located to avoid the primary use areas, and little livestock impact is anticipated. If monitoring identifies a problem, the planted sites would be fenced or caged to protect the plants..

Conflict with recreation and other human uses?	None.	Spanish Fork Canyon contains several utility corridors. The project areas are not within these and would not be affected by or affect the operation and maintenance of these. The general area is used for dispersed recreation, and may occasionally be visited by hunters and cross-country hikers. No impacts to these uses would occur. FSR #0725 up Tie Fork is a designated ATV route. The planting sites were located away from this route, on the mid or upper portion of the nearby slopes and therefore, no impacts are anticipated.
Effects on other species?	None.	None. Negligible disturbance and changes in the plant community would occur. These would have no affect on other wildlife and aquatic species, or other rare plant species.
Effects on heritage resources?	None.	None. The project areas have been surveyed and no heritage resources were found. Therefore, there would be no effects.
Effects on future fire suppression and fuels management projects in the area?	None.	The planting sites are located on steep shaley slopes with sparse ground cover. Because fuel loadings on the planting areas are low, these areas are generally not subject to intense fires. If fuels reduction projects were implemented, tactics could be employed to avoid or minimize harm to the planting sites. The areas would need to be avoided during fireline construction, but otherwise would have little impact on fuel treatment or fire suppression activities.
Effects on visual quality?	None	Negligible. Negligible soil disturbance and very minor changes in the plant community. These changes would not be apparent to most users, and would not be apparent at all from established travel routes.

ENVIRONMENTAL CONSEQUENCES

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in the chart above.

The project area is defined as the area in which the project would occur, that is, the thirteen separate acres containing the proposed introduction sites, along with routes to those sites. This is the area that would be receiving direct impacts from the project. The

cumulative effects analysis area for wildlife concerns is the Upper Spanish Fork Canyon Management Area as per the Uinta National Forest 2003 Land and Resource Management Plan (2003 Forest Plan). This is the area that could potentially be indirectly affected by the project, as well as the area where impacts from other projects within the area could add to impacts of the project. Data used for this analysis includes Forest records, surveys conducted for heritage resources, and for threatened, endangered, sensitive and management indicator species and habitat that would be affected by the proposed action. Data was also used from the 2003 Forest Plan and the Final Environmental Impact Statement for the 2003 Forest Plan.

THREATENED, ENDANGERED, AND R-4 SENSITIVE (TES) PLANT SPECIES - In addition to Clay phacelia, two Federally-listed plants (Deseret milkvetch and Ute ladies' –tresses) and six R-4 Sensitive Species plants (Barneby woody aster, dainty moonwort, slender moonwort, Garrett bladderpod, rockcress draba, and Wasatch jamesia) have been identified as potentially occurring within Utah County on the Uinta National Forest. These are discussed below:

Clay Phacelia - For affected environment, see the discussion in the Background section.

Alternative 1 – No Action

Direct and Indirect Effects

Under this alternative, no planting on the Uinta National Forest would take place, and no Forest-related direct or indirect effects on clay phacelia would occur. As a result, there would remain 2 known populations of this species, and those populations would continue to have fewer individuals than Recovery Plan objectives. This would continue to result in the species being at risk to unforeseen perturbations.

Seed collection from existing clay phacelia plants off-Forest would likely continue (as approved by the U.S. Fish and Wildlife Service and the landowners), with the goal of establishing a new population elsewhere on The Nature Conservancy or other non- National Forest System Lands.

Alternative 2 – The Proposed Action

Direct and Indirect Effects

If post-planting environmental conditions are favorable, up to thirteen new populations of clay phacelia would be started, and eventually would become established and self-sustaining. Adding several new populations on the Uinta National Forest would increase the total number of plants and populations, and reduce the risk of species extinction or setback from an unexpected perturbation. Establishing these populations would make major progress towards ensuring species viability, achieving Recovery Plan objectives, and eventual delisting.

Historically, the project areas have been grazed by livestock, prospected, and had nearby springs developed. The project areas are too steep for most other human

activities. In the immediate watersheds, other historic activities have been woodcutting, hunting and other recreation, usually with vehicles.

Cumulative Effects
One of the two existing clay phacelia populations located off-Forest is fenced and managed to minimize the impacts of human activity.

UDOT has been, and is continuing to improve (widening, constructing passing lanes on some reaches, etc.) Highway 6 to address public safety issues. Their activities in the past two years have come so close to an existing clay phacelia population that it may have been impacted. All but two areas of this work, totaling less than one acre, have been off NFS land. The project areas are outside of the existing highway corridor, and none are located in areas that UDOT has identified to be impacted by future improvement projects.

Deseret Milkvetch – Deseret milkvetch is a Federally-listed threatened wildflower found in Utah County, but only from a small patch of state and private land in the Birdseye area, on Moroni Formation soil (Natureserve 2004). There is no habitat for this species in the project area. Consequently, there will be no direct, indirect, or cumulative effects to Deseret milkvetch from implementation of either alternative.

Ute Ladies'-tresses Orchid – Ute ladies' – tresses is a Federally-listed threatened wildflower found in several locations in Utah County, in meadows adjacent to rivers or springs that have saturated soil all year long (Atwood 1991). Some have been found along the Soldier Creek, about twelve miles upstream of the stretch nearest the western set of phacelia introduction sites. There is no habitat for the species within the project sites. Consequently, there will be no direct, indirect, or cumulative effects to this species from implementation of either alternative.

R-4 Listed Sensitive Plants - The following table summarizes information on sensitive plants.

Table 4: Sensitive Plants on the Uinta National Forest.

SPECIES Common Name (Status) *(Scientific Name)*	Suitable Habitat in the Project Area?	DISTRIBUTION/HABITAT ASSOCIATION
Barneby Woody Aster (Sensitive) *Aster kingii var. barnebyana*	N	Rock outcrops, cliffs and ledges. On lower elevations restricted to northern aspects. Elevation range 5000-11,750 feet (Tuhy 1991).
Dainty Moonwort (Sensitive) *Botrychium crenulatum*	N	Wet meadows, marshes and bogs. In UT, only known from rare sites above 9000 feet (Farrar, 2004).
Slender Moonwort (Sensitive and ESA Candidate) *(Botrychium lineare)*	N	It has been found at sea level in cool climates, in Utah is most likely at higher elevations (about 4500-9000 ft) in mountains, specific habitats have ranged from meadow dominated by knee-high grass, shaded woods and woodlands, grassy horizontal

SPECIES Common Name (Status) *(Scientific Name)*	Suitable Habitat in the Project Area?	DISTRIBUTION/HABITAT ASSOCIATION
		ledges on a north-facing limestone cliff, and a flat upland section of a river valley (Natureserve 2004). There have been two documented populations, in Wasatch and Duchesne Cos., none on the Uinta NF (Farrar 2004).
Garrett bladderpod (Sensitive) *Lesquerella garrettii*	N	Alpine, subalpine talus and rock outcrops. Davis, Salt Lake, Utah and Wasatch counties. Elevation range 8900-11,400 feet (Tuhy 1991).
Rockcress draba (Sensitive) *Draba densifolia var. apiculata*	N	Alpine tundra, meadows and talus in rock stripes above timberline. Spruce-fir krummholz, moist soils on receding snowbanks. Uintah Mts, rare in Wasatch range (Salt Lake Co) and Deep Creek Mts (western Juab Co.). Elevation range 9420 to 11,450 feet (Welsh et al. 1993).
Wasatch jamesia (Sensitive) *Jamesia americana var. macrocalyx*	N	Rock crevices and cliffs in mountain brush and spruce-fir types. Northern aspects or shaded sites at lower elevations (Welsh et al. 1993).

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and other than clay phacelia, none of the other TES plant species inhabit the area. Therefore, there would be no direct, indirect or cumulative effects on TES plant species, other than as described previously for clay phacelia, from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects - Other than clay phacelia, none of the other TES plant species inhabit the project area. Consequently, there will be no direct or indirect effects to any of these plant species from this alternative.

Cumulative Effects - As this project would not result in any direct or indirect effects on any TES plant species other than clay phacelia, there would be no cumulative effects on these species from implementation of this alternative.

TES AND OTHER AQUATIC SPECIES – The Forest has one Federally-listed endangered fish species (June sucker), and two R-4 sensitive fish species (Bonneville cutthroat trout and Colorado River cutthroat trout) that occur on or near this portion of the Forest. In addition, the Spotted Frog and Utah valvata snail are rare aquatic species that inhabit, or once inhabited the general area. These are discussed below:

Bonneville cutthroat trout – Bonneville cutthroat trout is an R-4 Sensitive species and a Uinta National Forest Management Indicator Species (MIS). This species is found in Bonneville Basin drainages, including parts of the Spanish Fork River drainage. This species does not inhabit the streams closest to the project sites, and therefore, its habitat and populations would not be impacted by any of the alternatives.

Colorado River Cutthroat Trout - The Colorado River cutthroat trout, an R-4 Sensitive species, is only found in the Colorado River Basin, and therefore, would not be affected by this project.

Columbia Spotted Frog - Wasatch Front populations of Columbia spotted frogs (Rana luteiventris) are currently found in isolated springs or riparian wetlands in Juab, Sanpete, Summit, Utah and Wasatch counties. The spotted frog requires perennial water with well-vegetated edges, such as streams, rivers or ponds. Only two populations have been found on the Uinta National Forest, including one located about 12 miles west of the project areas near the mouth of Diamond Fork Creek. The U.S. Fish and Wildlife Services most recent review of the status of the Wasatch Front spotted frog found stable, viable and self-sustaining populations of the species distributed throughout the historic range. The USFWS also found that the status of the species continues to improve. There is potential habitat in the cumulative effects area, but not within the actual proposed phacelia sites. Therefore, this project would not directly or indirectly affect this species and thus, would not cumulatively affect this species.

June sucker (*Chasmistes liorus*) – This federally-listed endangered species historically inhabited Utah Lake and migrated up large tributary streams to spawn. Two subspecies have been identified *Chamistes liorus mictus* and *Chasmistes liorus liorus* (Sigler and Sigler 1996). Due to the early 1930's droughts and overharvest by commercial fishing, the subspecies *Chasmistes liorus liorus* was believed to have been extirpated (Tanner 1936). Presently *Chasmistes liorus liorus* and *Chamistes liorus mictus* are listed as endangered (Sigler and Sigler 1996). Currently June sucker inhabit Utah Lake and limited spawning occurs in the lower Provo River below the Forest boundary. Commercial fishing, dewatering of the Provo River, and severe drought have decimated this species. Pollution, predation by species introduced into its habitat, and hybridization with other species have been identified as continuing threats to the species (UDNR 1998). Although June sucker historically occurred within the Spanish Fork drainage, they are no longer present within the watershed or within the project area. There would be no direct or indirect impacts to June sucker from either alternative, and therefore, no cumulative effects to this species from implementation of this alternative.

Utah Valvata Snail - In Utah, the Utah Valvata Snail is an aquatic species that occurred historically in Utah Lake and prehistorically in other lakes (e.g., Bear Lake) and perhaps rivers (e.g., the Bear River). The species is now considered extirpated in Utah and it appears that its extirpation occurred sometime around the turn of the century. The existence of a few populations of this species in Idaho suggests that there is the remote possibility that a remnant population could be found in Utah. In the unlikely event that this were found to be so, such a population would almost certainly be somewhere in the northwestern quarter of the State (UDWR 2002). There would be no effect on Utah Valvata Snail from either of the alternatives.

TES AND OTHER TERRESTRIAL WILDLIFE SPECIES – Management Indicator Species (MIS) are listed in Appendix B of the 2003 Forest Plan. Species selected as MIS

are used to monitor a particular habitat type. This is accomplished by assessing the habitat conditions and population changes of the species that occupy each habitat as required in 36 CFR 219.19. MIS terrestrial wildlife species include: beaver, Northern goshawk, and three-toed woodpecker.

The USDI Fish and Wildlife Service lists the following federally protected animal species with potential to be found in Utah County as of July 2003: Canada lynx (*Lynx canadensis*) (T), bald eagle (*Haliaeetus leucocephalus*) (T), and the Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) (C).

The following are Forest Service sensitive terrestrial species having the potential to be located on the Uinta National Forest (Intermountain Region Proposed, Endangered, Threatened and Sensitive Species December 2003): spotted bat (*Euderma maculatum*), Townsend's big-eared bat (*Corynorhinus townsendii pallescens*), fisher (*Martes pennanti*), greater sage grouse (*Centrocercus urophasianus*), flammulated owl (*Otus flammeolus*), Northern goshawk (*Accipiter gentilis*), peregrine falcon (*Falco peregrinus*), and Northern three-toed woodpecker (*Picoides tridactytus*).

The following table lists the wildlife TES and MIS species found on the Uinta National Forest. The table includes USDI Fish and Wildlife Service federally listed threatened (T) and candidate (C) species, USDA Forest Service Region 4 Sensitive species (S), and Uinta National Forest Management Indicator Species (MIS) as identified in the 2003 Forest Plan. This table will be used to limit the following discussions of effects to those species that are located within either the project area or the cumulative effects area. Neo-tropical migratory birds (NTMB) are not listed on the table, but will be included in the discussion of effects.

The cumulative effects area for this project is the Upper Spanish Fork Canyon Management Area as delineated in the 2003 Forest Plan.

Table 3: Wildlife TES and MIS Species on the Uinta National Forest.

SPECIES **Common Name (*Scientific Name*) *(Status)***	**Presence in Project Area?**	**Suitable Habitat in Project Area?**	**Presence in Cumulative Effects Area?**	**Suitable Habitat in Cumulative Effects Area?**	**Distribution and Habitat Associations**
Bald eagle (*Haliaeetus leucocephalus*) (T)	N	N	Y	Y	Riparian habitats with large trees for roosting and perching, and open water for feeding. Bald eagles are primarily winter migrants.
Western Yellow-Billed Cuckoo (*Coccyzus Americanus Occidentalis*) (C)	N	N	N	Y	Large blocks of riparian habitat (>25 acres) consisting of cottonwoods and

SPECIES **Common Name (*Scientific Name*) *(Status)***	**Presence in Project Area?**	**Suitable Habitat in Project Area?**	**Presence in Cumulative Effects Area?**	**Suitable Habitat in Cumulative Effects Area?**	**Distribution and Habitat Associations**
					willows with dense understory foliage.
Canada lynx (*Lynx Canadensis*) (T)	N	N	N	N	Boreal forest habitat of both typical old growth and an early successional structure (habitat for snowshoe hares – their primary prey).
Spotted bat (*Euderma maculatum*)(S)	N	N	N	Y	Occurs in many different habitats. Cracks in limestone and sandstone 1-2 inches wide are important roosting areas (USDA 1991a).
Townsend's big-eared bat (*Corynorhinus townsendii pallescens*)(S)	N	N	Y	Y	Caves and adits are the primary habitat determinates for the species (USDA 1991a). Occurs in many different habitats.
Fisher *(Martes pennanti*)(S)	N	N	N	N	Mature and old-growth forest stands (UDNR 1998).
Northern goshawk (*Accipiter gentiles*) (S, MIS)	N	N	Y	Y	Closed canopy mature and old growth aspen and conifer habitats with an open understory (USDA 1999).
Peregrine falcon (*Falco peregrinus*)(S)	N	N	N	Y	Cliffs surrounded by open country are preferred for nesting and foraging (USDA 1991a).
Flammulated owl (*Otus flammeolus*)(S)	N	N	N	N	Mixed pine forests and conifer habitats in Utah (USDA 1991a).
Northern three-toed woodpecker (*Picoides tridactytus*)(S, MIS)	N	N	N	Y	Mixed forests with dead trees (USDA 1991a).
Greater sage grouse *(Centrocercus urophasianus)* (S)	N	N	N	N	Sagebrush dominated habitat- Strawberry Valley and the Vernon Unit on the

SPECIES **Common Name (*Scientific Name*) *(Status)***	**Presence in Project Area?**	**Suitable Habitat in Project Area?**	**Presence in Cumulative Effects Area?**	**Suitable Habitat in Cumulative Effects Area?**	**Distribution and Habitat Associations**
					Uinta National Forest (FEIS F-76)
Beaver (*Castor Canadensis*) (MIS)	N	N	Y	Y	Riparian habitats with an abundance of willows, cottonwoods

(T) = Threatened, (C) = Candidate, (S) = Sensitive, (MIS) = Management Indicator Species

The following species are eliminated from further discussion due to lack or presence and/or habitat within the project and cumulative effects area: Canada lynx (T), fisher (S), flammulated owl (S), and greater sage grouse (S).

Beaver - On the Uinta National Forest beavers are widely distributed. They inhabit a wide range of riparian habitats where there is perennial water and food. The primary food sources are willow, aspen and in lower-elevation forests, cottonwood.

The White River Area Assessment (1996) described the beaver populations in the Middle Fork and Tabbyune Creek as healthy and sustaining. The Right Fork population was thought to be declining. The populations in the Left Fork were described as restricted to the upper ends of the drainage.

Beaver occupancy was observed in Tie Fork Creek in the part of the stream between two sets of phacelia project sites in April 2004. The project areas are located several hundred feet from the stream and do not contain any perennial water or riparian habitat.

The Left Fork of White River was surveyed in June 2003 for the presence of beaver and beaver dams. The Left Fork contained 47 beaver dams in a 3.6-mile stretch (~12.8 dams/mile) between Boiler Canyon and the Forest boundary. Four bank dens and three lodges were found. Only one of the dams and one of the bank dens appeared to be abandoned.

The Right Fork of the White River was surveyed for the 2001 White River Restoration Project. Ten beaver dams were found on a one-mile reach starting at the project boundary (~10 dams/mile). The recently completed restoration work on the Right Fork will increase the habitat available for the beavers to occupy.

Beaver surveys on other parts of the Forest have found similar densities. In 2002, 58 dams were counted on the segment of lower Wanrhodes Creek (about 2.5-3 miles in length) above the Diamond Fork Road. In 2004, 67 dams were observed in this reach, 36 percent of which were active. This equates to about 8 active dams/stream mile. Beaver surveys (2003) on part of the Heber Ranger District found 13 of 33 beaver dams to be active (39%) in the reaches surveyed. However, 92% of the dams located in areas with

extensive willow habitat were active while only 5% of those located elsewhere were active. Other 2003 beaver surveys on the Spanish Fork Ranger District found a high density of active dams (~10 dams/stream mile), and a very high percentage (98%) of these were active (NOTE: The streams surveyed generally have extensive willow habitat). Diamond Fork Creek and some of its tributaries were surveyed in April 2002 for the presence of beaver and beaver dams. These 2002 surveys found 17 potentially active beaver dams within three and a half miles downstream of Springville Crossing, and five potentially active beaver dams within one-half mile upstream of Springville Crossing. In 2004, Diamond Fork Creek was again surveyed and 44 dams were found, 34 of which (79%) were active. The 2004 survey included a stream reach that was not accessible at that time, and therefore not surveyed in 2002. The 2004 data indicates a density of nearly 10 active beaver dams per stream mile.

Based on the beaver surveys conducted and other field observations by Forest Service wildlife biologists, in the professional judgement of these biologists the data described above is indicative of beaver populations and trends throughout the rest of the White River drainage. The Left Fork population now includes the lower reaches of the drainage, and the Right Fork population will be stable to increasing with the increase in riparian vegetation resulting from the completion of the restoration project. The trend for beaver in this area is stable to increasing for all drainages.

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on beaver from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects - The project would be implemented several hundred to several thousand feet from any perennial water bodies, and the project areas contain no riparian habitat. Consequently, there would be no direct impacts to beaver or their habitat.

The plantings would disturb very small areas of soil, scattered over up to 13 acres. This would have no affect on water yield. The areas of disturbance are small, and the intensity of disturbance light. As a result, project-generated erosion would be very little if any. Due to the distance from waterways, any erosion would have no indirect affects on water quality, beaver or their riparian habitat.

Cumulative Effects
This project would not result in any direct or indirect effects on beaver. Therefore, there would be no cumulative effects from implementation of this alternative.

Northern Goshawk - This species is found in several locations throughout the Uinta National Forest. The species utilizes a variety of trees for nesting, using sticks as nest material. Goshawks forage in dense woodlands, but prefer a more open understory for flight purposes (USDA 1991a). Northern goshawk surveys were conducted within the

cumulative effects analysis area in 1997-1999, 2001-2004 (Field notes on file in District Office). There were no responses or sightings within the project area. There is an established goshawk territory less than a mile northeast of the project area within the cumulative effects area. While foraging habitat does exist within the cumulative effects area, no foraging habitat is found within the project area.

The Forest has been monitoring goshawk population trend since 1996 by monitoring territory occupancy (USDA 1996-2004). Between 13 and 20 territories were monitored annually across the Uinta National Forest. Territory occupancy ranged from 8 to 37 percent during those years, with no strong negative or positive trend over time. In 2004, 30% of the territories were occupied.

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on goshawks from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects – The clay phacelia project areas are not occupied by northern goshawks, and do not contain suitable goshawk habitat. Therefore, there will be no direct effects of project implementation on this species. The proposed treatments would involve very limited activity, and result in very little change in the biological environment (other than addition of clay phacelia). None of this would occur within suitable goshawk habitat. Consequently, there would be no indirect effects on goshawk or its habitat.

Cumulative Effects - This project would result in no direct or indirect effects on goshawk or its habitat. Therefore, there would be no cumulative effects from implementation of this alternative.

Northern Three-toed Woodpecker - The Northern three-toed woodpecker resides in coniferous forest and requires dead trees for cavity nests. Three-toed woodpeckers excavate their own nest cavities in large (9” dbh or larger) snags or occasionally in live trees, usually in areas with high insect populations (USDA 1991c). Up to 75 percent of its diet consists of wood-boring beetles and caterpillars that attack dead or dying conifers. This species occurs throughout mountainous areas of Utah. It is considered common in the Uinta Mountains but uncommon elsewhere in the State. It is frequently detected in spruce/fir forests on the Uinta National Forest.

No nesting habitat is within or adjacent to the proposed project areas, although limited, scattered habitat does occur in the Upper Spanish Fork Canyon Management Area.

Three-toed woodpeckers have been located on the Forest in neo-tropical bird surveys. There are 45 survey transects on the Forest. Birds were identified on the Heber Mountain #2 transect in 1995 and 2000 and on the Heber Mountain #1 transect in 1997 and 1998. No birds have been located on the remaining neo-tropical bird survey transects.

Three-toed woodpeckers have also been recorded on the Soapstone breeding bird transect on the Heber Ranger District in 1996, 2001, 2002, and 2003. (Survey Notes are on file at Spanish Fork Ranger District).

Random forest surveys in potential habitat were conducted in June 2001 and 2003. Heber Ranger District had sites located in Wolf Creek Campground and Bryant's Fork. The Spanish Fork Ranger District had sites located in the Left Fork of the White River and the Nebo Unit. No three-toed woodpeckers were found on the Pleasant Grove Ranger District, possibly due to the lack of dead trees in coniferous forests. Surveys for three toed woodpeckers were conducted in the cumulative effects analysis area in 2001 and 2003. During the 2001 survey, one unconfirmed three-toed woodpecker sighting occurred in the White River watershed. None were found in the 2003 survey.

In 2004, another survey for this species was conducted. One to four birds were detected at 14 (~33%) of the survey sites. In addition, project surveys detected three-toed woodpeckers at 17 sites. Four of the 14 detections were on the Spanish Fork Ranger District, but none were within Diamond Fork Creek drainage. This is consistent with past neo-tropical surveys in Diamond Fork and breeding bird surveys in nearby Sheep Creek, where no three-toed woodpeckers have been observed.

Although this species is widely distributed, it occurs at relatively low densities in most areas. Data for the western Breeding Bird Survey region shows no evidence that population trends of this species have been declining during the past 20 years. The 2004 Uinta National Forest survey data indicates that this species is relatively common in suitable conifer habitats on the Forest. They were commonly detected in mature to old spruce-fir and Douglas-fir forest types, and were especially common in these habitats where insects were active. This suggests that the numbers of birds are stable where suitable habitat is present. None of the alternatives would directly or indirectly affect any spruce-fir or Douglas-fir habitats suited for this species.

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on northern three-toed woodpeckers from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects - The project would not occur in or near coniferous forest habitat required by this species. Therefore, there would be no direct or indirect effects to this species.

Cumulative Effects
This project would not result in any direct or indirect effects on northern three-toed woodpeckers. Therefore, there would be no cumulative effects to this species from implementation of this alternative.

Bald Eagle - Bald eagles require habitat that will provide them with open water for feeding and large, mature trees for nesting, roosting, and perching (DeGraaf et. Al. 1991). Winter habitat used by eagles includes lakes, streams or rivers for feeding (Saxton 1997). Along rivers, bald eagles typically perch and roost in large cottonwood trees. Some of these habitats exist within the cumulative effects analysis area, but none within the project areas. In Utah, the bald eagle is primarily a winter resident, with only limited breeding occurring within the State. Wintering bald eagles typically begin arriving in November, are most abundant in January and February, and begin heading north again in March. Bald eagles are opportunistic and occur where food is most available. They often congregate near rivers, lakes, and marshes looking for unfrozen, open water from which to catch fish. In north-central Utah, bald eagles also occur in desert valleys where a large portion of their diet is composed of carrion, especially road- and hunter-killed black-tailed jackrabbits. On the Uinta National Forest, wintering bald eagles have been recorded in American Fork Canyon, Provo Canyon, Diamond Fork Canyon, Salt Creek, the Vernon Management Area, White River, as well as other areas across the Forest. Winter eagle surveys conducted in 2003 found eagles in Diamond Fork Canyon, but none within the project area or cumulative effects analysis area.

There are only four known breeding occurrences in Utah for bald eagles, none of which occur on the Uinta National Forest (UDNR 1998).

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on big game from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects – No nesting or riparian forest habitats exist within the project area, though some do occur within the Upper Spanish Fork Canyon Management Area. The project would have no direct effects on bald eagles. Limited foraging habitat occurs along Tie Fork Creek. The clay phacelia project would involve very minor disturbance to a very small area (small scattered spots with a total impact area < 13 acres), and these impacts would be located well away from the stream and riparian area. This would not noticeably change the landscape, or habitats (including aquatic) for species the eagle may prey upon. Project implementation would necessarily occur during the fall, prior to the primary season of potential use by eagles. There would be no indirect effects to bald eagles from the clay phacelia project.

Cumulative Effects - This project would result in no direct or indirect effects on bald eagles. Therefore, there would be no cumulative effects from implementation of this alternative.

Western Yellow-billed Cuckoo - The western yellow-billed cuckoo (Coccyzus americanus occidentalis) was classified as a candidate for listing under the Endangered Species Act in 2001. They are found almost exclusively in low-elevation (below 7,000-

7,500 feet) riparian forests in Utah. The cuckoo requires large blocks (greater than 25 acres) of riparian habitat (particularly woodlands with cottonwoods and willows) with dense understory foliage (USDI 2001). Their diet consists mostly of hairy caterpillars but they will also eat cicadas, beetles, grasshoppers, crickets, other insects, berries, frogs and lizards (Stokes 1996).

The western yellow-billed cuckoo is rare in Utah. The May 2001 Natural Heritage database shows 18 known locations in Utah. This species has not been found on the Uinta National Forest; however it has been seen along the Provo and lower Spanish Fork Rivers both of which are in close proximity to the Uinta National Forest (Williams, 2001).

Surveys for yellow-billed cuckoos were conducted in riparian forest habitats on the Uinta National Forest during spring 2002, but none were detected. Surveys were conducted along American Fork, the North Fork of American Fork, Right Fork of Hobble Creek, Diamond Fork, Pole Canyon, Bear Canyon, Vernon Creek, and Little Valley Creek. The species was not observed in the 1992-2004 Sheep Creek Breeding Bird Surveys, or in neo-tropical bird surveys conducted in the cumulative effects analysis area.

Although potential habitat does exist in the general area along the Indian Creek drainage, no western yellow-billed cuckoos have been recorded there. There is no suitable habitat for this species within the phacelia project area.

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on Western yellow-billed cuckoo from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects – There is no suitable habitat for this species within the phacelia project area. There would be no direct impacts to Western yellow-billed cuckoo from this project. This species has not been observed in surveys in the cumulative effects analysis area, and this alternative would not result in disturbance or impacts to riparian forests that are habitat to this species. There would be no indirect impacts to Western yellow-billed cuckoos or their habitat.

Cumulative Effects - This project would result in no direct or indirect effects on Western yellow-billed cuckoos. Therefore, there would be no cumulative effects to this species from implementation of this alternative.

Spotted Bat - The spotted bat has been found in Utah in several habitats including low land riparian, desert shrub communities, sagebrush-rabbit brush, ponderosa pine forest, montane grassland (grass-aspen) and montane forest and woodland (grass-spruce-aspen) (UDNR 2000a). Most spotted bat records in Utah come from southern Utah. They use rock crevices high up on steep cliff faces. Cracks in limestone and sandstone with 1-2 inches widths are important roosting sites (USDA 1991a). Surveys conducted at abandon

mine sites in American Fork Canyon (Pleasant Grove Ranger District) found occurrences of spotted bats in 1997. Spotted bats are not historically known to inhabit the area. There is limited potential habitat and no historical occurrence within the project area, and no surveys specific to this species have been conducted here.

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on big game from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects – The project will involve brief duration, and minor disturbance to isolated spots scattered over less than 13 acres. These impacts will occur on steep, rocky Green River Shale slopes, and not the limestone or sandstone rock outcrops that are the preferred habitat for this species. No spotted bats have been observed in this area during past visits and work in this area. There will be no direct or indirect effects to spotted bats from the clay phacelia project.

Cumulative Effects - This project would result in direct or indirect effects on spotted bats. Therefore, there would be no cumulative effects to this species from implementation of this alternative.

Townsend's Big-Eared Bats - Townsend's big-eared bats are known to occur throughout Utah, and are a well-known hibernator utilizing caves and mines. Caves or adits are the primary habitat determinants for the species (USDA 1991a). The species utilizes desert shrub, pinyon-juniper, pinyon-juniper-sagebrush, mountain brush, mixed forest, and ponderosa pine forest for foraging habitat (UDNR 2000a). They have been found at elevations between 3,300 and 8,850 feet in Utah.

There is a population of Townsend's big-eared bats in the west Monks Hollow adit approximately 15 miles west of the project area.

There is no primary roosting habitat, which include mines or adits (UDNR 1998) within the project or cumulative effects analysis areas. Limited roosting habitat occurs in rock outcrops and ledges. Townsend's big-eared bats are not historically known to inhabit the phacelia project area.

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on Townsend's big-eared bats from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects – There are no caves, mines or adits within or near the project area, and therefore, the primary roosting habitat for this species will not be affected by implementation of this alternative. There are some shale outcrops and ledges in the vicinity of the project areas, but no activities will occur on these. The project will occur in habitat types used for foraging by this species, but the project will involve minimal brief disturbance and result in very little if any noticeable change in vegetation (other than the clay phacelia). No Townsend's big-eared bats have been recorded here. Thus, this alternative will not directly, and will have negligible or no indirect effects to Townsend's big-eared bats.

Cumulative Effects - This project would result in no or minimal direct or indirect effects on Townsend's big-eared bats. Therefore, there would be no cumulative effects to this species from implementation of this alternative.

Peregrine Falcon - Peregrines typically occupy a wide variety of open habitats near water. Cliffs are preferred for nesting habitat. They often nests on cliffs, but also on riverbanks, tundra mounds, large stick nests of other species, tree cavities, and human-made structures (DeGraaf, et al 1991). They forage wherever prey concentrate, especially river mouths, lakeshores, farmlands, and river valleys. The flacon primarily nests on the Colorado Plateau and a few locations along the Wasatch Front. Historical nests are known from above Alpine (Pleasant Grove Ranger District) in the early 1970s and in the canyons east of Utah Lake from the 1930s to the 1960s, but no nests have been found on the Uinta National Forest in recent years. There is very limited potential habitat for peregrines in the analysis area.

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on peregrine falcon from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects – There is no cliff nesting habitat within, or directly adjacent to the project areas, and limited other potential habitat. Peregrines do not currently inhabit this area. The proposed treatments would have minimal effect on vegetation, and would involve only minor and brief disturbance to the environment. There would be no direct or indirect effects from this project on peregrine falcon.

Cumulative Effects - This project would result in no direct or indirect effects on peregrine falcon. Therefore, there would be no cumulative effects to this species from implementation of this alternative.

Neotropical Migratory Birds - Riparian areas provide important nesting and foraging habitat for numerous bird species, including many species of neo-tropical migratory birds. Two neo-tropical migratory bird survey routes are located near the phacelia project

area – one in Soldier Summit and another in the Tucker area. Survey results for the Soldier Summit showed 35 species of birds in 1994 and 33 species in 2000. The Tucker survey showed 33 species in 2000.

Species of birds known from both survey routes and associated with riparian habitats include red-tailed hawk, Northern flicker, dusky flycatcher, hermit thrush, American robin, warbling vireo, MacGillivray's warbler, western tanager, black-headed grosbeak, fox sparrow, and song sparrow. The broad-tailed hummingbird, a Utah Partners in Flight Avian Conservation Strategy's Priority species (Parrish et al 1999) was found during both Soldier Summit surveys.

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on neo-tropical birds from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects – The phacelia project areas are outside of and not adjacent to any riparian areas or wetlands, and will not directly or indirectly affect these habitats. This alternative will result in brief, very minor disturbance to the soils and possibly vegetation (small areas impacted over < 13 acres). This will have a negligible effect on these habitats. There will be no direct and minimal or no indirect effects to neo-tropical birds from this alternative.

Cumulative Effects - This project would result in no direct or indirect effects on neo-tropical birds. Therefore, there would be no cumulative effects to neo-tropical birds from implementation of this alternative.

Big Game Species - The Upper Spanish Fork Canyon Management Area provides large areas of critical and high value winter range for elk and mule deer. The proposed project areas are located within big game winter range (2003 Forest Plan, Pages Appendix E-1 and Appendix E-2), and are used year-round by big game. Rocky Mountain bighorn sheep were common within this area before the late 1800s, but over-hunting and disease transmission and competition from domestic sheep led to their extirpation. Golden eagles nest within the management area along Spanish Fork Canyon.

Alternative 1 – No Action
Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on big game from implementation of this alternative.

Alternative 2 – The Proposed Action
Direct and Indirect Effects – The phacelia project areas are located within big game winter range. This alternative will result in brief, very minor disturbance to the soils and possibly vegetation (small areas impacted over < 13 acres). This will have no or negligible effects on big game forage or cover. Project

implementation will result in brief minor disturbance in the fall, well outside of the winter big game use season. There will be no direct and negligible indirect effects to big game from this alternative.

Cumulative Effects - This project would result in no direct, and no or negligible indirect effects on big game. Therefore, there would be no cumulative effects to big game from implementation of this alternative.

LIVESTOCK GRAZING

The project areas are in a part of the Diamond Fork Cattle Allotment that is closed to grazing. However, the general area is crossed by sheep moving to nearby allotments. Five bands of sheep trail along the bottom of Tie Fork Canyon in June, October and occasional other times. This area contains some of the project sites. Sheep also cross the closed watershed to access the Baldy Sheep Allotment and to travel between the Jacob and Baldy Sheep Allotments. If sheep moved into any of the sites, cages designed and installed to exclude rodents and other wildlife from grazing the clay phacelia plants would not be a threat to sheep safety, and would serve to prevent livestock grazing on the phacelias.

Alternative 1 – No Action

Direct and Indirect Effects - No activities would be implemented and therefore, there would be no direct, indirect or cumulative effects on livestock grazing from implementation of this alternative.

Alternative 2 – The Proposed Action

Direct and Indirect Effects - The project areas are outside of any areas open for grazing, but some of the project sites are located near an existing livestock driveway. The project areas are small in size, and most sites are located in places not likely to be affected by livestock driveway use. Some proposed planting areas are located on the mid- and upper portion of steep, shaley slopes, in the Tie Fork drainage. Sheep being trailed through the bottom of Tie Fork Canyon might move onto the steep barren slopes where the project sites would be, because of their natural tendencies to climb hills. The introduction sites in Tie Fork are located well away from the drainage bottom that constitutes the center of this livestock driveway. Consequently, sheep use and trampling in the proposed planting areas in this drainage are expected to be minor. If monitoring determines that the unexpected occurs and livestock are impacting the plantings, the planted areas would likely be fenced or the plantings placed in cages for protection. These areas would be very small (< 1 acre in size each, and cumulatively less than 13 acres in size), are dispersed, and would not affect sheep movement through the area.

The plantings would disturb very little if any vegetation (the planting sites are essentially barren shale slopes), and thus a negligible amount of forage for sheep moving through the area would be impacted. Consequently, there will be no direct or indirect effects to grazing from implementation of this alternative.

Cumulative Effects - This project would result in no or minimal direct or indirect effects on livestock grazing. Therefore, there would be no cumulative effects to livestock grazing from implementation of this alternative.

U.S. HIGHWAY 6 OPERATION, MAINTENANCE AND IMPROVEMENT

UDOT and their consultant company HDR both sent letters (see project file) seeking clarification of whether the three project sites in nearest Highway 6, between mileposts 198 and 199 would be compromised by highway construction. UDOT Engineer John Higgins met with Uinta National Forest Ecologist Denise Van Keuren on August 11, 2004. On comparing maps, they concluded there would be no conflict, because highway construction in this section of highway had already been completed (Van Keuren, 2004).

Alternative 1 – No Action

Direct and Indirect Effects - No activities would be implemented and there would be no direct, indirect or cumulative effects on highway operation, maintenance, or improvement from implementation of this alternative.

Alternative 2 – The Proposed Action

Direct and Indirect Effects - The project areas are outside of any areas that are currently undergoing, or are anticipated to be needed or impacted by operation, maintenance, and improvements to Highway 6. Consequently, there will be no direct or indirect effects to grazing from implementation of this alternative.

Cumulative Effects - This project would result in no direct or indirect effects on highway operations, maintenance, or current or future improvement. Therefore, there would be no cumulative effects from implementation of this alternative.

RIGHTS AND RIGHTS-OF-WAY

The Utah Division of Water Rights database indicates there are some outstanding water rights in the general area of the westernmost project sites, but they are not directly within the project sites (UT Div. Water Rights, 2004).

Two powerlines run east-west through the general area of the phacelia project. A 120-foot wide right-of-way is associated with each powerline. Both lines belong to Pacificorp, which holds a special use permit authorizing the powerlines and rights of way on the Uinta National Forest. When the project sites were selected, the team took care that each site was outside any powerline right of way.

Alternative 1 – No Action

Direct and Indirect Effects - No activities would be implemented and there would be no direct, indirect or cumulative effects on water rights or rights-of-way from implementation of this alternative.

Alternative 2 – The Proposed Action

Direct and Indirect Effects - When the project sites were selected, the team took care that each planting area was located outside of any powerline right-of-way, and away from water bodies and any water developments. Disturbance associated with this activity will be very limited, and erosion negligible. No impacts to water yield or water quality would occur. Consequently, there will be no direct or indirect effects to water rights, or utility operation and management from implementation of this alternative.

Cumulative Effects - This project would result in no direct or indirect effects on water rights, or on operation and management of the powerline. Therefore, there would be no cumulative effects from implementation of this alternative.

RECREATION

The Uinta National Forest, receives a large amount of recreational use. Spanish Fork Canyon has excellent access via Highway 6, and areas accessed by roads and trails receive considerable recreation use. The proposed planting sites may occasionally be visited by hunters and possibly by a few cross-country hikers. No designated travel routes (either motorized or non-motorized) pass through any of the proposed planting areas. The Tie Fork Road, a designated ATV route, passes near several sites.

Alternative 1 – No Action

Direct and Indirect Effects - No activities would be implemented and there would be no direct, indirect or cumulative effects on recreation use from implementation of this alternative.

Alternative 2 – The Proposed Action

Direct and Indirect Effects - When the project sites were selected, the team took care that each planting area was located away from any existing travel route, and areas of heavy recreation use. Forest Service Road #0725, Tie Fork Road, is located near the bottom of the Tie Fork drainage. To avoid potential impacts to the plantings from vehicles, the proposed action was designed so the planting areas were located several hundred feet or more from any roads. Vehicle use, under the 2003 Forest Plan, is confined to existing travel routes. The planting areas in Tie Fork drainage are located on the mid and upper portions of the slopes. Since no clay phacelia or plantings are proposed on or adjacent to the Tie Fork Road or other designated travel routes, use and management of these travel routes would not be directly or indirectly impacted by this alternative.

Disturbance associated with this activity will be very limited, and impacts on recreation use negligible. The occasional hunter or cross-country hiker will still be able to use the project and surrounding area, and these users would likely be unaware that these projects had been implemented. No direct or indirect impacts to recreation use would occur from implementation of this alternative.

Cumulative Effects - This project would result in no direct or indirect effects on recreation use. Therefore, there would be no cumulative effects from implementation of this alternative.

HERITAGE RESOURCES

Spanish Fork Canyon has a long history of human use and occupancy. The thirteen project sites and walking routes to them were surveyed by the Forest archeology crew. No heritage resource sites were found.

Alternative 1 – No Action

Direct and Indirect Effects - No activities would be implemented and there would be no direct, indirect or cumulative effects on heritage resources from implementation of this alternative.

Alternative 2 – The Proposed Action

Direct and Indirect Effects – No heritage sites are present in the project areas or on the walking routes into them. Therefore, no direct or indirect impacts to heritage resources would occur from implementation of this alternative.

Cumulative Effects - This project would result in no direct or indirect effects on heritage resources. Therefore, there would be no cumulative effects from implementation of this alternative.

FIRE AND FUELS

The project area is located in a sparsely vegetated Utah juniper/mountain shrub/grass-forb stand. The sites suitable for clay phacelia, and selected for the project area are vegetated by scattered Utah juniper, Gambel oak, buckwheat, rabbitbrush, sagebrush, and a variety of forbs. Interspersed in patches through these are shale covered slopes and outcrops essentially barren and devoid of vegetation. Fuel loadings vary considerably between the barren areas and the more densely vegetated areas, but as a whole are light. These types of areas often fail to burn in wildfire events due to their light fuel loadings and discontinuous fuels.

Alternative 1 – No Action

Direct and Indirect Effects - No activities would be implemented and there would be no direct, indirect or cumulative effects on fire or fuels management from implementation of this alternative.

Alternative 2 – The Proposed Action

Direct and Indirect Effects – When the project sites were selected, the team took care that each planting area was located on suitable areas of Green River Shale soils. Clay phacelia plants are annual plants that range from three inches to 24 inches tall. With the densities called for, and given the limited productivity of these sites, the plantings would result in little if any increase in fuel loadings. Because the plantings are located in areas with very little or no vegetation, and thus very little fine fuels, these habitats often do not burn in wildfire events. When burning conditions are such that a fire would carry across these areas, the burns would be quick and of low intensity. Such a fire would likely result in

death of the annual clay phacelia plants, but would be of too low an intensity to impact any seed storage in the soil. Fireline construction could remove a population, and bury any stored seed. Therefore, fire suppression activities would need to be managed to avoid fireline construction through the 13 sites. The size and distribution of the actual planting sites are such that they could fairly easily be avoided during fireline construction. This would likely rarely if ever be contemplated, as most of the 13 sites are located mid-slope in areas not usually desirable for fire control line placement.

This alternative is not likely to impact future fuels treatment options. Its habitat has a naturally low fuel loading (due to soil and slope conditions), and therefore would not be a high priority for treatment. Prescribed burning is not likely to be planned in this area because of potential smoke dispersion/safety issues with the nearby Highway 6. If at some point in the future it is determined fuels need to be treated here, these small areas could reasonably be treated mechanically (e.g. using chainsaws, hand piling, etc.) to avoid negatively impacting the phacelia. Consequently, this alternative would have minimal impacts on fire suppression and fuels management activities.

Cumulative Effects - This project would result in minimal direct or indirect effects on fire suppression and fuels management projects. Therefore, there would be negligible cumulative effects from implementation of this alternative.

OTHER CONSIDERATIONS

Health and Safety – The introduction sites, walking routes to those sites and planned introduction activities do not involve great risks to health or safety. The areas are steep but walkable. Planting these sites would not affect health and safety considerations for the public.

Unique Characteristics – There are no characteristics of the project sites that are outstanding or unique. Hundreds of acres of the Uinta National Forest share the same topography, soils and vegetation. There are no park lands, prime farmlands, wetlands, wild and scenic rivers, wilderness areas or ecologically critical areas in or near the project sites. The sites are located just south of, but not within the Tie Ridge Inventoried Roadless Area (#0418017) as identified in the EIS for the 2003 Forest Plan (pages C-9 and C-120).

Controversy – There is no controversy associated with the clay phacelia introduction project, either as regards human impacts or science. The Forest Service and the U. S. Fish and Wildlife Service have extensive experience with species reintroduction and revegetation techniques proposed for this project. The proposed techniques are not new, and no risks are involved to humans, or any other species.

Future Actions – This project is not likely to establish a precedent for future actions with significant effects. There is not another rare species known near the Uinta National Forest for which the same level of opportunity exists for successful reintroduction.

Cumulative Impacts – The cumulative effects of this project combined with other past, current or planned human activities in the area would not be significant, as shown by the discussions in other sections of this chapter.

Compliance with Law – The clay phacelia introduction project does not involve a violation of any Federal, State or local law or requirements imposed for the protection of the environment. The project complies with the mandate of the Endangered Species Act for federal agencies to cooperate in recovering listed species.

This decision to introduce new populations of clay phacelia on the Uinta National Forest is consistent with the intent of the 2003 Forest Plan's long term goals and objectives listed on pages 2-5 and 2-6. The project was designed in conformance with land and resource management plan standards and incorporates appropriate land and resource management plan guidelines for noxious weed prevention and revegetation (Land and Resource Management Plan, pages 3-15 to 3-19).

CONSULTATION AND COORDINATION

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

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Confederate Tribes of the Goshute Reservation
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Utah Environmental Congress
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Spanish Fork Grazing Company and other adjacent landowners

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