PROJECT INFORMATION

Project Title:	Tulie Solar Hybrid Project
Project Type:	ENERGY DEVELOPMENT, SOLAR
Latitude/Longitude (DMS):	32.905327 / -106.013992
County(s):	OTERO
Project Description:	Uploaded Developer's Project Description

REQUESTOR INFORMATION

Project Organization:	
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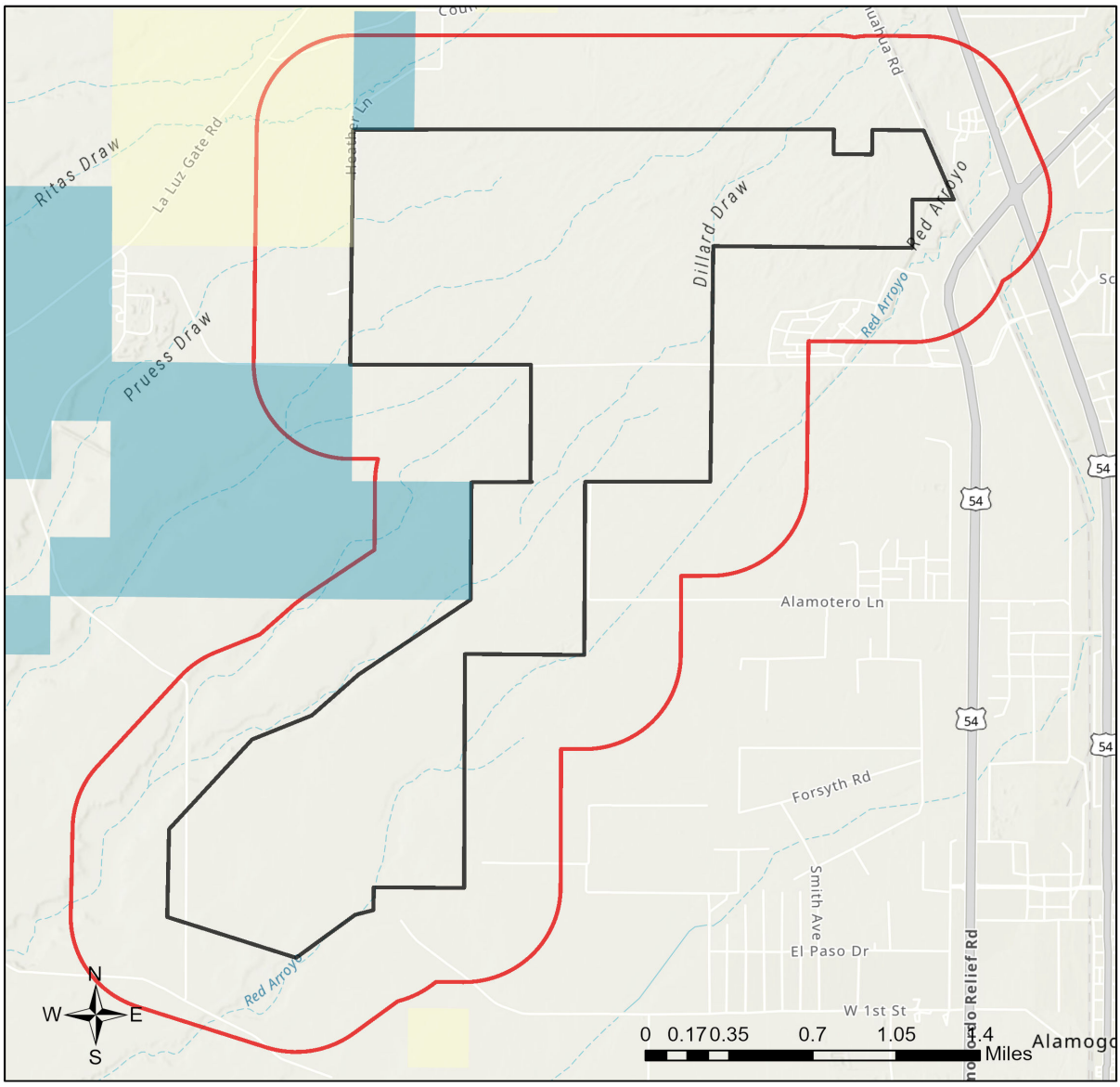
OVERALL STATUS

This report contains an initial list of recommendations regarding potential impacts to wildlife or wildlife habitats from the proposed project; see the Project Recommendations section below for further details. Your project proposal is being forwarded to a New Mexico Department of Wildlife (Department) biologist for review to determine whether there are any additional recommendations regarding the proposed actions. A Department biologist will be in touch within 30 days if there are further recommendations regarding this project proposal.

About this report:

- This environmental review is based on the project description and location that was entered. The report must be updated if the project type, area, or operational components are modified.
- This is a preliminary environmental screening assessment and report. It is not a substitute for the potential wildlife knowledge gained by having a biologist conduct a field survey of the project area. Federal status and plant data are provided as a courtesy to users. The review is also not intended to replace consultation required under the federal Endangered Species Act (ESA), including impact analyses for federal resources from the U.S. Fish and Wildlife Service (USFWS) using their Information for Planning and Consultation tool.
- This report contains information on wildlife species protected under the ESA and the Wildlife Conservation Act (WCA), Species of Greatest Conservation Need (SGCN) (page 18, table 5), and Species of Economic and Recreational Importance (SERI). Species listed under the ESA are protected from take at the federal level and under the WCA are protected from take at the state level. SGCN are identified in the State Wildlife Action Plan (SWAP) for New Mexico; all of these species are considered to be of conservation concern but not all of them are protected from take at the state or federal level. The harvest of all SERI is regulated at the state level. The Department has no authority to designate critical habitat for species listed under the WCA; only the USFWS can designate critical habitat for species listed under the ESA.
- The New Mexico Environmental Review Tool (ERT) utilizes species observation locations and species habitat suitability models, both of which are subject to ongoing change and refinement. Inclusion or omission of a species within a report cannot guarantee species presence or absence within your project area. To determine occurrence of any species listed in this report, or other wildlife that may be present within your project area, onsite surveys conducted by a qualified biologist during appropriate, species-specific survey timelines may be necessary. Any surveys including handling or capturing wildlife may require a scientific collection permit; contact the Department's Wildlife Permits Manager at dgf.permits@dgf.nm.gov for more information.
- The Department encourages use of the ERT to modify proposed projects for avoidance, minimization, or mitigation of wildlife impacts. However, the ERT is not intended to be used in a repeatedly iterative fashion to adjust project attributes until a previously determined recommendation is generated. The ERT serves to assess impacts once project details are developed. The New Mexico Crucial Habitat Assessment Tool, the data layers from which are included in the ERT, is the appropriate system for advising early-stage project planning and design to avoid areas of anticipated wildlife concerns and associated regulatory requirements.

Tulie Solar Hybrid Project



- Buffered Project Boundary
- Project_Boundary
- Bureau of Land Management
- City Land
- County Land
- Department of Defense
- Department of Energy
- National Park Service
- NM Department of Game & Fish
- NM State Forestry Division
- NM State Parks
- Other Federal Agency
- Other Federal Agency
- State Land Office
- State of New Mexico
- Tribal Land
- U.S. Army Corps of Engineers
- U.S. Bureau of Reclamation
- U.S. Department of Agriculture
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- U.S. Natural Resources Conservation Service

NHNM, USGS, USFS, US Census Bureau, NMDGF
Texas Parks & Wildlife, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS
Esri, NASA, NGA, USGS

Special Status Animal Species Potentially within 650 Meters of Project Area

Common Name	Scientific Name	Wildlife Habitats	USFWS (ESA)	NMDOW (WCA)	NMDOW SGCN/SERI	USFS	USFS SCC	BLM
Plains Leopard Frog	Lithobates blairi	Aquatic, Arroyo, Desert, Plains, Riparian			SGCN			BLM WATCH
Common Black-Hawk	Buteogallus anthracinus	Alpine, Aquatic, Arroyo, Cliff, Desert, Riparian		T	SGCN	Sensitive Species		BLM WATCH
Aplomado Falcon	Falco femoralis			E	SGCN			
Peregrine Falcon	Falco peregrinus			T	SGCN			BLM WATCH
Elf Owl	Micrathene whitneyi	Alpine, Desert, Riparian			SGCN			BLM WATCH
Western Burrowing Owl	Athene cunicularia hypugaea	Alpine, Arroyo, Cliff, Desert, Plains, Riparian			SGCN	Sensitive Species	USFS R3 SCC	BLM SENSITIVE
Common Nighthawk	Chordeiles minor	Alpine, Aquatic, Arroyo, Cliff, Desert, Plains, Riparian			SGCN			
Lewis's Woodpecker	Melanerpes lewis	Alpine, Desert, Riparian			SGCN		USFS R3 SCC	BLM WATCH
Pinyon Jay	Gymnorhinus cyanocephalus	Alpine, Aquatic, Arroyo, Cliff, Desert, Plains, Riparian			SGCN		USFS R3 SCC	BLM SENSITIVE
Pygmy Nuthatch	Sitta pygmaea	Alpine, Cliff, Riparian			SGCN			
Mountain Bluebird	Sialia currucoides	Alpine, Aquatic, Cliff, Desert, Plains, Riparian			SGCN			
Bendire's Thrasher	Toxostoma bendirei	Alpine, Arroyo, Cliff, Desert, Plains, Riparian			SGCN		USFS R3 SCC	BLM SENSITIVE
Sprague's Pipit	Anthus spragueii	Alpine, Desert, Plains			SGCN			BLM SENSITIVE
Loggerhead Shrike	Lanius ludovicianus	Alpine, Arroyo, Cliff, Desert, Plains, Riparian			SGCN		USFS R3 SCC	BLM WATCH
Bell's Vireo	Vireo bellii	Alpine, Arroyo, Desert, Plains, Riparian		T	SGCN			BLM SENSITIVE
Black-Throated Gray Warbler	Setophaga nigrescens	Alpine, Arroyo, Cliff, Desert, Riparian			SGCN			BLM WATCH
Black-Chinned Sparrow	Spizella atrogularis	Alpine, Arroyo, Cliff, Desert, Riparian			SGCN			BLM WATCH
Vesper Sparrow	Pooecetes gramineus	Alpine, Aquatic, Arroyo, Desert, Plains, Riparian			SGCN			
Chestnut-Collared Longspur	Calcarius ornatus	Alpine, Desert, Plains			SGCN			BLM SENSITIVE
Spotted Bat	Euderma maculatum	Alpine, Aquatic, Arroyo, Cliff, Desert, Plains, Riparian		T	SGCN	Sensitive Species	USFS R3 SCC	BLM SENSITIVE

Special Status Animal Species Potentially within 650 Meters of Project Area

Common Name	Scientific Name	Wildlife Habitats	USFWS (ESA)	NMDOW (WCA)	NMDOW SGCN/SERI	USFS	USFS SCC	BLM
Mountain Lion	Puma concolor				SERI			
Elk	Cervus canadensis				SERI			
Mule Deer	Odocoileus hemionus				SERI			
Pronghorn	Antilocapra americana				SERI			
Rock Rattlesnake	Crotalus lepidus	Alpine, Cliff, Desert			SGCN			
Desert Massasauga	Sistrurus catenatus edwardsii	Alpine, Desert, Plains			SGCN			

Common Name hyperlink takes you to species account in bison-m.org; Scientific Name hyperlink takes you to information in NatureServe Explorer; Wildlife Habitats abbreviations are: Alpine = Alpine and Montane, Arroyo = Arroyo Riparian, Cliff = Cliff, Scree, and Rock, Desert = Desert Grassland and Shrubland, Plains = Plains-Mesa Grasslands, Riparian = Riparian Woodlands and Wetlands; ESA = Endangered Species Act, C = Candidate, DL = Delisted, LE = Listed Endangered, LT = Listed Threatened, PE = Proposed Endangered, PT = Proposed Threatened, UR = Under Review, XN = Non-essential Experimental Population, for other ESA codes see this website; WCA = Wildlife Conservation Act, E = Endangered, T = Threatened; SERI = Species of Economic and Recreational Importance; SGCN = Species of Greatest Conservation Need; USFS = U.S. Forest Service, Sensitive Species = A species likely to occur on USFS lands that is of concern for a potential reduction in population viability; SCC = Species of Conservation Concern; BLM = Bureau of Land Management, BLM SENSITIVE = A species that occurs on BLM lands and whose viability is at risk, BLM WATCH = Species that may be added to the sensitive species list in future pending new information regarding species status.

Special Status Plant Species Potentially within 650 Meters of Project Area

Common Name	Scientific Name	USFWS (ESA)	NMAC	NMRPCS	USFS	USFS SCC	BLM
Night-Blooming Cereus	Peniocereus greggii var. greggii		E				BLM SENSITIVE

NMAC = New Mexico Administrative Code, E = Endangered; NMRPCS = New Mexico Rare Plant Conservation Strategy, SS = NM Rare Plant Conservation Strategy Species; USFS = U.S. Forest Service, Sensitive Species = A species likely to occur on USFS lands that is of concern for a potential reduction in population viability; SCC = Species of Conservation Concern; BLM = Bureau of Land Management, BLM SENSITIVE = A species that occurs on BLM lands and whose viability is at risk, BLM WATCH = Species that may be added to the sensitive species list in future pending new information regarding species status.

Project Recommendations

Your proposed project activities may require a custom review for assessment of potential effects to wildlife. See the "OVERALL STATUS" section above to determine the likelihood that your project will be reviewed further based on its location. A Department biologist will confirm whether any additional conservation measures are needed. You should expect to receive any additional project recommendations within 30 days of your project submission. If the "OVERALL STATUS" section indicates that no further consultation with the Department is required based on its location, then you will only receive additional project feedback from the Department if a biologist deems it necessary.

If bats may be present in your project area and your project entails the following types of activities, the Department recommends following the relevant portions of the *Guidelines for Mitigating Impacts of Development on New Mexico's Bat Communities*: bridge, building, or culvert demolition; extensive construction, excavation, paving, or trenching; outdoor lighting installation; pesticide use; prescribed burning; riparian restoration; vegetation removal.

Grading, blading, or removal of soil within the proposed solar project area should be minimized to the greatest extent possible. Minimize soil compaction by ensuring that heavy equipment has rubber tires and tracks and avoid the use of "drive and crush", "disc and roll", and other similar techniques. Avoid driving in wet conditions. Soil stabilization measures should be implemented within 2 weeks of disturbance. The Department encourages stockpiling and reusing topsoil on site as much as feasible.
Whenever feasible, retain 60-70% native vegetation within the project area and keep part (at least 5%) of the fenced area totally undisturbed from construction, maintenance, or vegetation management activities. Designate areas where disturbance will be avoided in design plans. Remnant patch spacing should be less than 0.6 miles given travel distances of pollinating insects. This will help retain wildlife habitat features within the site, preserve existing vegetation and soil structure, and protect species including sheltering, nesting, and overwintering locations for pollinating insects. Keeping the existing soil and root structures intact also helps to maximize water infiltration, minimize erosional run-off, and reduce biodiversity loss within the site.
Remediate soil compaction following construction. Consider conducting post-construction bulk density testing to inform soil remediation techniques focused on improving infiltration rates. Design solar panel configurations to minimize concentrated runoff along existing site drainage features. This includes placing panels parallel to site slopes, sufficient spacing between panel rows (e.g., spacing at least as wide as the panels themselves), and incorporating green stormwater infrastructure to promote water infiltration and erosion control.
Security perimeter fencing around the solar facility should be constructed to allow for some wildlife permeability. Leaving a 6- to 8-inch gap between the ground surface and bottom of the fence will allow smaller terrestrial wildlife species to move freely through the area and make use of any suitable habitat within the solar facility. Retain patches of undisturbed habitat within and adjacent to the project area and connect these patches with a minimum of 300-feet wide, unfenced corridors. For large solar arrays, optimally include a 300-feet wide corridor for every mile of fence and keep corridors as short as possible. Wider corridors or vegetative screening of project fencing may be needed when pronghorn (*Antilocapra americana*) or other big game animals are present in the area. Angle fencing at perimeter and corridor corners to facilitate animal movement around the project area.
To protect important and sensitive wildlife habitats, place solar arrays at least 200 feet from the edges of desert washes and any aquatic or riparian habitats and build in previously disturbed or developed areas whenever possible. To minimize potential for fenced areas to drive animals onto roadways, place fenced areas at least 300 feet from roadways that don't have wildlife-proof fencing. In the event that development must encompass desert washes, ensure that fences do not cross these washes and fragment this sensitive habitat.
All migratory birds are protected against direct take under the federal Migratory Bird Treaty Act (16 U.S.C. Sections 703-712), and hawks, falcons, vultures, owls, songbirds, and other insect-eating birds are protected under New Mexico State Statutes (17-2-13 and 17-2-14 NMSA), unless permitted by the applicable regulatory agency. To minimize the likelihood of adverse impacts to migratory birds, nests, eggs, or nestlings, the Department recommends that ground disturbance and vegetation removal activities be conducted outside of the primary migratory bird breeding season. This season runs from 15 April - 1 September for upland songbirds, willow flycatcher (*Empidonax traillii*), yellow-billed

cuckoo (*Coccyzus americanus*), and other riparian songbirds; 1 March - 1 September for most raptors; 1 January - 15 July for golden eagle (*Aquila chysaetos canadensis*) and great horned owl (*Bubo virginianus*); and 1 March - 15 September for low-elevation deserts. If ground-disturbing and clearing activities must be conducted during the breeding season, the area should be surveyed by a qualified, permitted biologist for active nest sites (with birds or eggs present in the nesting territory) and avoid disturbing active nests until young have fledged. For active nests, establish adequate buffer zones to minimize disturbance to nesting birds. Buffer distances should be at least 100 feet from songbird and raven nests; 0.25 miles from most raptor nests; and 0.5 miles for ferruginous hawk (*Buteo regalis*), golden eagle, peregrine falcon (*Falco peregrinus*), and prairie falcon (*Falco mexicanus*) nests. Active nest sites in trees or shrubs that must be removed should be mitigated by qualified, permitted biologists or wildlife rehabilitators. Department biologists are available to consult on nest site mitigation and can facilitate contact with qualified personnel. Removal of active nests of state-protected species may require a scientific collection permit; contact the Department's Wildlife Permits Manager at dgf.permits@dgf.nm.gov for more information.

Please also consider impacts to pollinating insects from the removal of flowering plants and ground-disturbing activities. If possible, avoid removing flowering plants when bees and other insect pollinators are most actively foraging (March-October), including early flowering native tree and shrub species. Also avoid any observed bumble bee (*Bombus* spp.) nest sites using a buffer of at least 30 feet. Implement measures to prevent the spread of noxious weeds and invasive plants, including removing dirt, debris, and plant parts from equipment before bringing it on site. If mowing vegetation for maintenance purposes, mow during the overwintering period for bees (November-February) to avoid removing important forage resources and individual organism impacts. Avoid mowing in early spring as floral resources are typically limited yet important in this period when bumble bee queens are starting new colonies. If mowing must occur May-October, then keep at least 66% of the area unmowed to retain sufficient forage resources, enhance water infiltration, and prevent erosion. If feasible, mow no more than twice a year at varying times, mow vegetation to no more than 10 inches in height, use a flushing bar and mow during the middle of the day at lower speeds to reduce individual mortality, and leave small patches of vegetation (e.g., milkweed [*Asclepias* spp.], flowering plants with pithy stems, full vegetation strips) untouched.

For post-construction reclamation of the solar project area, the Department recommends that the project proponent use only native plant species and that the reclamation seed mix is designed to enhance local pollinator habitat, unless there is concern regarding potential for pesticide, especially neonicotinoid, presence. For pollinating insects, including a diversity of flowering plants with different colors and shapes and flowering times that span spring through fall (March-October), rarer plants, perennials, native bunch grasses and thistles, some plants with pithy and woody stems, some bare ground, and high-nutrient or value plants (e.g., goldenrods [*Solidago* spp.], gumweed [*Grindelia* spp.], or sunflowers [*Helianthus* spp.]) may be beneficial. Ideally, at least three different species should be flowering at all times between March and October. Consult pollinator-friendly plant species lists provided by the Xerces Society for Invertebrate Conservation or other appropriate resources, including the New Mexico Department of Transportation's regional seed lists. No-till drills may be more effective than broadcast seeding for establishing flowering plants. The Department also recommends that only certified weed-free seed be used to avoid inadvertently introducing non-native species to the reclamation site. Any alternate plant species, used to substitute for primary plant species that are unavailable at the time of reclamation, should also be native. When possible, the Department recommends using seeds that are sourced from the same region and habitat type as the reclamation site and suggests including seeds from a region that represents potential future climatic conditions at the site. Include as much locally appropriate genetic diversity in seed sources as possible.

The highly invasive, noxious weed African rue *(Peganum harmala)* has been documented near the proposed project area. African rue thrives on disturbed sites and along road sides. It is extremely drought-tolerant and will undergo rapid vegetative growth when soil moisture is available. African rue is extremely toxic to horses, sheep, cattle, and humans, containing at least four types of poisonous alkaloids. In addition, most parts of the plant contain allelopathic chemicals that will reduce the growth of surrounding native plants. To help control this species' spread, the Department recommends that any vehicles and equipment arriving on the project site be thoroughly cleaned of all visible dirt and mud to help contain and control the potential spread of weed seeds. The operator should also initiate a weed management program that includes a commitment to aggressive control of any African rue on the project site. For more information on potential control of African rue, see this field guide.

Burrowing owl (*Athene cunicularia*) may occur within your project area. Burrowing owls are protected from take by the Migratory Bird Treaty Act and under New Mexico state statute. Before any ground disturbing activities occur, the Department recommends that a preliminary burrowing owl survey be conducted by a qualified biologist using the Department's Burrowing Owl Survey Protocol. Surveys including audio calls may require a scientific collection permit; contact the Department's Wildlife Permits Manager at dgf.permits@dgf.nm.gov for more information. Should burrowing owls be documented in the project area, please contact the Department or USFWS for further recommendations and information on any permitting requirements regarding relocation or avoidance of impacts. The Wild Take Unit at the USFWS, which issues take and relocation permits for migratory birds, can be reached at MBPermits_take@fws.gov.

The current project area appears to contain one or more wetland types as classified by the New Mexico Environment Department's Wetland Map. Information on wetlands in your project area can also be viewed on the ERT's Create Project/Map page. This key can assist in interpreting Landscape Position, landform, water flow path, and waterbody type (LLWW) codes in the ERT's wetland data. Wetlands provide important habitat for numerous species of wildlife and pollinators and provide ecosystem services, such as water filtration and storage, to downstream users. The Department recommends avoiding disturbance of wetlands whenever possible, avoiding actions or infrastructure installment that may disrupt natural wetland hydrological processes, and reseeding or replanting areas where disturbance cannot be avoided with native wetland plant species appropriate to the local wetland type. For a list of native seed providers, please see the Department's habitat handbook guideline for Restoration and Management of Native and Non-native Trees in Southwestern Riparian Ecosystems. For projects involving filling wetlands under federal jurisdiction, please contact the Army Corps of Engineers for more information on permits required under the Clean Water Act.

Disclaimers regarding recommendations:

- The Department provides technical guidance to support the persistence of all protected species of native fish and wildlife, including game and nongame wildlife species. Species listed within this report include those that have been documented to occur within the project area, and others that may not have been documented but are projected to occur within the project vicinity.
- Recommendations are provided by the Department under the authority of § 17-1-5.1 New Mexico Statutes Annotated 1978, to provide "communication and consultation with federal and other state agencies, local governments and communities, private organizations and affected interests responsible for habitat, wilderness, recreation, water quality and environmental protection to ensure comprehensive conservation services for hunters, anglers and nonconsumptive wildlife users".
- The Department has no authority for management of plants or Important Plant Areas. The New Mexico Endangered Plant Program, under the Energy, Minerals, and Natural Resources Department's Forestry Division, identifies and develops conservation measures necessary to ensure the survival of plant species within New Mexico. Plant status information is provided within this report as a courtesy to users. Recommendations provided within the ERT may not be sufficient to preclude impacts to rare or sensitive plants, unless conservation measures are identified in coordination with the Endangered Plant Program.
- Additional coordination and/or consultation may also be necessary under the federal ESA or National Environmental Policy Act (NEPA). Further site-specific mitigation recommendations may be proposed during ESA consultation and/or NEPA analyses or through coordination with affected federal agencies.
- Unless a project is marked as confidential in the title or description by the project proponent and if a ERT-generated report is the only response that the project proponent receives from the Department, then the report will be made publicly accessible via the Public Comment Letters page on the ERT website.