



U.S. Department of the Interior
Bureau of Land Management



U.S. Department of Agriculture
U.S. Forest Service

Bears Ears National Monument: Draft Monument Management Plans and Environmental Impact Statement Shash Jáa and Indian Creek Units Volume 2: Literature Cited, Glossary, and Appendices

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BLM Mission

It is the mission of the Bureau of Land Management to sustain health, diversity, and productivity of the public lands for use and enjoyment of present and future generations

USFS Mission

The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations

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GLOSSARY

Allotment: An area of land where one or more livestock operators graze their livestock. Allotments generally consist of BLM lands but may also include other Federally-managed, State-owned, or private lands. An allotment may include one or more separate pastures. Livestock numbers and periods of use are specified for each allotment.

American Indian Tribe: Any Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994 (Pub. L. 103-454; 108 Stat. 4791; 25 USC 479a-1.).

Animal unit month (AUM): A standardized measurement of the amount of forage necessary for the sustenance of one cow unit or its equivalent for 1 month. Approximately 800 pounds of forage.

Area of Critical Environmental Concern (ACEC): Areas within the public lands where special management attention is required to: (1) protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or (2) protect life and safety from natural hazards.

Authorized Officer: The Federal employee who has the delegated authority to make a specific decision.

Avoidance areas: Areas with sensitive resource values where rights-of-way or special use permits would be strongly discouraged. Authorization made in avoidance areas would have to be compatible with the purpose for which the area was designated and not is otherwise feasible on lands outside the avoidance area.

Best management practices (BMP): A suite of techniques that guide, or may be applied to, management actions to aid in achieving desired outcomes. Best management practices are often developed in conjunction with land use plans, but they are not considered a land use plan decision unless the land use plan specifies that they are mandatory. They may be updated or modified without a plan amendment if they are not mandatory.

Big game: Large species of wildlife that are hunted, such as elk, deer, bighorn sheep, and pronghorn antelope.

Browse: To browse (verb) is to graze; also, browse (noun) is the tender shoots, twigs, and leaves and shrubs often used as food by livestock and wildlife.

Closed: Generally denotes that an area is not available for a particular use or uses; refer to specific definitions found in law, regulations, or policy guidance for application to individual programs.

Code of Federal Regulations (CFR): The official, legal tabulation or regulations directing Federal government activities.

Conformance: That a proposed action shall be specifically provided for in the land use plan or, if not specifically mentioned, shall be clearly consistent with the goals, objectives, or standards of the approved land use plan.

Contiguous: Lands or legal subdivisions having a common boundary; lands having only a common corner are not contiguous.

Cooperating agency: Assists the lead Federal agency in developing an Environmental Analysis (EA) or Environmental Impact Statement (EIS). The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act of 1969 (NEPA) defines a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA. Any tribe of Federal, State, or local government jurisdiction with such qualifications may become a cooperating agency through an agreement with the lead agency.

Corridor: A wide strip of land within which a proposed linear facility could be located.

Council on Environmental Quality (CEQ): An advisory council to the President of the United States established by NEPA of 1969. It reviews Federal programs for their effect on the environment, conducts environmental studies, and advises the president on environmental matters.

Critical habitat: For listed species, consists of (1) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act, on which are found those physical or biological features (constituent elements) (a) essential to the conservation of the species and (b) which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act upon a determination by the Secretary that such areas are essential for the conservation of the species. Designated critical habitats are described in 50 CFR§ 17 and 226.

Crucial habitat: Habitat on which a species depends for survival because there are no alternative ranges or habitats available.

Cryptobiotic (cryptogrammic) soils: Biological communities that form a surface layer or crust on some soils. These communities consist of cyanobacteria (blue-green bacteria), micro fungi, mosses, lichens, and green algae and perform many important functions, including fixing nitrogen and carbon, maintaining soil surface stability, and preventing erosion. Cryptobiotic crusts also influence the nutrient levels of soils and the status and germination of plants in the desert. These crusts are slow to recover after severe disturbance, requiring 40 years or more to recolonize even small areas.

Cultural resources: A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit. They may be but are not necessarily eligible for the National Register.

Cultural site: Any location that includes prehistoric and/or historic evidence of human use or that has important sociocultural value.

Cumulative impact: The impact on the environment that results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Desired condition: Description of those factors that should exist within ecosystems both to maintain their survival and to meet social and economic needs.

Dispersed recreation: Recreation activities of an unstructured type, which are not confined to specific locations such as recreation sites. Example of these activities may be hunting, fishing, off-road vehicle use, hiking, and sightseeing.

Drought: Drought is a protracted period of deficient precipitation resulting in extensive damage to crops, resulting in loss of yield.

Endangered species: A plant or animal species whose prospects for survival and reproduction are in immediate jeopardy, as designated by the Secretary of the Interior, and as is further defined by the Endangered Species Act.

Environmental Impact Statement (EIS): A detailed written statement required by the NEPA when an agency proposes a major Federal action significantly affecting the quality of the human environment.

Erosion: The wearing away of the land surface by running water, wind, ice, or other geological agents.

Exclusion area: Areas with sensitive resource values where rights-of-way would not be authorized.

Extensive Recreation Management Area (ERMA): An area where significant recreation opportunities and problems are limited and explicit recreation management is not required. Minimal management actions related to the BLM's stewardship responsibilities are adequate in these areas.

Federal Land Policy and Management Act of 1976 (FLPMA): Public Law 94-579. October 21, 1976, often referred to as the BLM's "Organic Act," which provides the majority of the BLM's legislated authority, direction, policy, and basic management guidance.

Federal Register: A daily publication that reports presidential and Federal agency documents.

Fire management plan: A plan that identifies and integrates all wildland fire management and related activities within the context of approved land/resource management plans. A fire management plan defines a program to manage wildland fires (wildfire and prescribed fire). The plan is supplemented by operational plans, including but not limited to, preparedness plans, preplanned dispatch plans, prescribed fire burn plans, and prevention plans. Fire management plans assure that wildland fire management goals and components are coordinated.

Floodplain: The relatively flat area or lowlands adjoining a body of standing or flowing water, which has been or might be covered by floodwater.

Fossil: Any remains, trace, or imprint of a plant or animal that has been preserved in the Earth's crust since some past geologic or prehistoric time.

Goal: A broad statement of a desired outcome. Goals are usually not quantifiable and may not have established time frames for achievement.

Guidelines: Actions or management practices that may be used to achieve desired outcomes, sometimes expressed as best management practices. Guidelines may be identified during the land use planning process, but they are not considered a land use plan decision unless the plan specifies that they are mandatory.

Habitat: A specific set of physical conditions that surround a species, group of species, or a large community. In wildlife management, the major constituents of habitat are considered to be food, water, cover, and living space.

Habitat fragmentation: The disruption (by division) of extensive habitats into smaller habitat patches. The effects of habitat fragmentation include loss of habitat area and the creation of smaller, more isolated patches of remaining habitat.

Impact: A modification of the existing environment caused by an action. These environmental consequences are the scientific and analytical basis for comparison of alternatives. Effects may be either direct, which are caused by the action and occur at the same time and place, or indirect, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable, or cumulative.

Implementation decisions: Decisions that take action to implement land use plan decisions. They are generally appealable to Interior Board of Land Appeals.

Implementation plan: A site-specific plan written to implement decisions made in a land use plan. An implementation plan usually selects and applies best management practices to meet land use plan objectives. Implementation plans are synonymous with “activity” plans. Examples of implementation plans include interdisciplinary management plans, habitat management plans, and allotment management plans.

Interdisciplinary team: A group of individuals with different training, representing the physical sciences, social sciences, and environmental design arts, assembling to solve a problem or perform a task. The members of the team proceed to a solution with frequent interaction so that each discipline may provide insights to any stage of the problem and disciplines may combine to provide new solutions. The number and disciplines of the members preparing the plan vary with circumstances. A member may represent one or more disciplines or BLM program interests.

Irretrievable: An environmental effect caused by an action, or series of actions, that cannot be reversed or undone, until or unless the cause of the effect is removed or the effect is restored or rehabilitated (e.g., inundating a river canyon by construction of a dam, clear cut logging a forest). The loss of production of renewable resources during the life of a land use plan.

Land use allocation: The identification in a land use plan of the activities that are allowed, restricted, or excluded for all or part of the Planning Area, based on desired future conditions.

Land use plan decision: Establishes desired outcomes and the actions needed to achieve them. Decisions are reached using the BLM and USFS planning process. When they are presented to the public as proposed decisions, they can be protested to the BLM Director. They are not appealable to Interior Board of Land Appeals.

Land use plan or resource management plan: A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA and NFMA; an assimilation of land-use-plan-level decisions developed through the planning process, regardless of the scale at which the decisions were developed.

Limited roads and trails designation: Designated areas where the use of off-road vehicles is subject to restrictions, such as limiting the number or types of vehicles allowed, dates and times of use (seasonal restrictions), and limiting all use to designated roads and trails. Under the designated roads and trails designation, use would be allowed only on roads and trails that are signed for use. Combinations of restrictions are possible, such as limiting use to certain types of vehicles during certain times of the year.

Management decision: A decision made by the BLM to manage public lands. Management decisions are made on both land use plan decisions and implementation decisions.

Management opportunities: A component of the analysis of the management situation; actions or management directions that could be taken to resolve issues or management concerns.

Mechanized travel: Travel by use of a machine, either motorized or non-motorized.

Minimize: To reduce the adverse impact of an operation to the lowest practical level.

Mitigation measures: Methods or procedures that reduce or lessen the impacts of an action.

Monument Management Plan (MMP): A land use plan as prescribed by the Federal Land Policy and Management Act and National Forest Management Act which establishes, for a National Monument and given area of land, land-use allocations, coordination guidelines for multiple-use, objectives and actions to be achieved.

Multiple use: The management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the lands for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some lands for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including but not limited to, recreation, range, minerals, watershed, wildlife and fish, and natural scenic, scientific, and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the lands and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or greatest unit output.

National Environmental Policy Act of 1969 (NEPA): An act that encourages productive and enjoyable harmony between man and his environment and promotes efforts to prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches the understanding of the ecological systems and natural resources important to the Nation, and establishes the CEQ.

National Monument: An area created from any land owned or controlled by the federal government for the protection of objects of historical, cultural, and/or scientific interest. National Monuments can be created by proclamation of the President of the United States or by Congress.

Non-mechanized travel: Travel by foot or on an animal.

Non-wilderness study areas (WSA) lands with wilderness characteristics: Undeveloped Federal land that has been inventoried and/or reviewed by a BLM interdisciplinary team and determined to possess wilderness characteristics such as those listed in section 2(c) of the Wilderness Act of 1964. These lands do not possess special management designations like Wilderness Study Areas (WSA).

Noxious weeds: A plant species designated by Federal or State law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or non-native, new, or not common to the United States.

Objective: A description of a desired condition for a resource. Objectives can be quantified and measured and, where possible, have established time frames for achievement.

Off-highway vehicle (OHV) : Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: (1) any nonamphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the Authorized Officer, or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used in times of national defense emergencies.

Open: Generally denotes that an area is available for a particular use or uses. Refer to specific program definitions found in law, regulations, or policy guidance for application to individual programs.

Paleontological resources (fossils): Any fossilized remains, traces, or imprints of organisms, preserved in or on the Earth's crust, that are of paleontological interest and that provide information about the history of life on Earth.

Paleontology: A science dealing with the life forms of past geological periods as known from fossil remains.

Planning Area: A geographical area, including all land ownerships, for which BLM land use and resource management plans (RMP) are developed and maintained for the BLM-administered lands within that geographical area.

Planning criteria: The standards, rules, and other factors developed by managers and interdisciplinary teams for their use in forming judgments about decision making, analysis, and data collection during planning. Planning criteria streamline and simplify the resource management planning actions.

Prescribed fire: Any fire intentionally ignited by management actions in accordance with applicable laws, policies, and regulations to meet specific objectives.

Primitive and unconfined recreation: Non-motorized, non-mechanized and undeveloped types of recreational activities.

Public land: Land or interest in land owned by the United States and administered by the Secretary of the Interior through the BLM or Secretary of Agriculture through the USFS, except lands located on the Outer Continental Shelf, and land held for the benefit of Indians, Aleuts, and Eskimos.

Range development: A structure, excavation, treatment, or development to rehabilitate, protect, or improve lands to advance range betterment.

Rangeland: Land used for grazing by livestock and big game animals on which vegetation is dominated by grasses, grass-like plants, forbs, or shrubs.

Raptor: Bird of prey with sharp talons and strongly curved beaks such as hawks, owls, vultures, and eagles.

Record of decision (ROD): A document signed by a responsible official recording a decision that was preceded by the preparing of an EIS.

Relict: A remnant or fragment of the vegetation of an area that remains from a former period when the vegetation was more widely distributed.

Resource use: Human uses of resources for the social and economic benefit of society, including mining, energy production, livestock production (grazing), recreation (motorized, non-motorized), forest production (timber, fire wood, fence posts), utility corridors (power lines, pipelines, roads), and communication sites. Land use plans identify allowable uses of the public lands and set goals and objectives for desired outcomes for resource uses.

Resource: The natural, biological, and cultural components of the environment, including air, soil, water, vegetation, wildlife, minerals, historic and prehistoric (cultural) sites and features, and fossils. Land use plans set goals and objectives for desired outcomes for management of the various resources in a planning area.

Right-of-way (ROW): A ROW grant is an authorization to use a specific piece of BLM-administered public land for a specific project. The grant authorizes rights and privileges for a specific use of the land for a specific period of time.

Riparian area: A form of wetland transition between permanently saturated wetlands and upland areas. Riparian areas exhibit vegetation or physical characteristics that reflect the influence of permanent surface or subsurface water. Typical riparian areas include lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels. Excluded are ephemeral streams or washes that lack vegetation and depend on free water in the soil.

Route: A linear line for motorized travel.

Scenic byways: Highway routes, which have roadsides or corridors of special aesthetic, cultural, or historic value. An essential part of the highway is its scenic corridor. The corridor may contain outstanding scenic vistas, unusual geologic features, or other natural elements.

Scoping: The process of identifying the range of issues, management concerns, preliminary alternatives, and other components of an EIS or land-use planning document. It involves both internal and public viewpoints.

Section 106 compliance: The requirement of Section 106 of the National Historic Preservation Act that any project funded, licensed, permitted, or assisted by the Federal government be reviewed for impacts to significant historic properties and that the State Historic Preservation Officer and the Advisory Council on Historic Preservation be allowed to comment on a project.

Section 7 consultation: The requirement of Section 7 of the Endangered Species Act that all Federal agencies consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service if a proposed action might affect a Federally listed species or its critical habitat.

Sensitive species: All species that are under status review, have small or declining populations, live in unique habitats, or need special management. Sensitive species include threatened, endangered, and proposed species as classified by the Fish and Wildlife Service and National Marine Fisheries Service.

Significant: An effect that is analyzed in the context of the proposed action to determine the degree or magnitude of importance of the effect, whether beneficial or adverse. The degree of significance can be related to other actions with individually insignificant but cumulatively significant impacts.

Slope: The degree of deviation of a surface from the horizontal.

Special Recreation Management Area (SRMA): Areas that require explicit recreation management to achieve recreation objectives and provide specific recreation opportunities.

Special status species: Includes proposed species, listed species, and candidate species under the Endangered Species Act; State listed species; and BLM State Director designated sensitive species (see BLM Manual 6840-Special Status Species Policy).

Special use permit (SUP): An SUP an authorization to use a specific piece of USFS-administered public land for a specific project. The SUP authorizes rights and privileges for a specific use of the land for a specific period of time.

Stipulations: Requirements that are part of the terms of a BLM or USFS land use approval. Some stipulations are standard on all approval. Other stipulations may be applied to the lease at the discretion of the surface management agency to protect valuable surface resources and uses.

Surface disturbance: Activities that normally result in more than negligible disturbance to public lands and that accelerate the natural erosive process. These activities normally involve use and/or occupancy of the surface, cause disturbance to soils and vegetation, and are usually caused by motorized or mechanical actions. Surface disturbance may result from activities using earth-moving equipment; off road vehicle travel; vegetation treatments; the use of pyrotechnics and explosives; and construction of facilities like power lines, pipelines, recreation sites, livestock facilities, wildlife waters, or new roads. Surface disturbance is not normally caused by casual use. Activities that are not typically surface-disturbing include, but are not limited to, proper livestock grazing, cross-country hiking, minimum impact filming and vehicle travel on designated routes.

Sustainability: The ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time.

Threatened species: Any plant or animal species defined under the Endangered Species Act as likely to become endangered within the foreseeable future throughout all or a significant portion of its range; listings are published in the Federal Register.

Undertaking: (54 USC 300320): A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license or approval; and those subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency.

User day: Any calendar day, or portion thereof, for each individual accompanied or serviced by an operator or permittee on the public lands of related waters; synonymous with passenger day or participant day.

Utility corridor: A parcel of land that has been identified by law, Secretarial order, through a land use plan or by other management decision as being the preferred location for existing and future ROW grants and suitable to accommodate one type of ROW or one or more ROWs which are similar, identical or compatible.

Vegetation type: A plant community with distinguishable characteristics described by the dominant vegetation present.

Visual resources: The visible physical features of a landscape (topography, water, vegetation, animals, structures, and other features) that constitute the scenery of an area.

Water quality: The chemical, physical, and biological characteristics of water with respect to its suitability for a particular use.

Watershed: All lands, which are enclosed by a continuous hydrologic drainage, divide and lay upslope from a specified point on a stream.

Way: A vehicle route within a Wilderness Study Area that was in existence and identified during the FLPMA Section 603-mandated wilderness inventory. The term is also used during wilderness inventory to identify routes that are not roads. The term developed from the definition of the term "roadless" provided in the Wilderness Inventory Handbook (September 27, 1978), as follows: "roadless refers to the absence of roads which have been improved and maintained by mechanical means to insure relatively regular and continuous use. A way maintained solely by the passage of vehicles does not constitute a road."

Wilderness characteristics: Features of the land associated with the concept of wilderness that specifically deal with naturalness and opportunities for solitude and primitive and unconfined recreation. These characteristics may be considered in land use planning when BLM determines that those characteristics are reasonably present, of sufficient value (condition, uniqueness, relevance, importance), and need (trend, risk), and are practical to manage. Key characteristics of wilderness listed in section 2 (c) of the Wilderness Act of 1964 were used by BLM in conducting wilderness inventories. These characteristics are features of land associated with the concept of wilderness.

Wilderness Study Area (WSA): A roadless area or island of undeveloped Federal land that has been inventoried and found to possess wilderness characteristics described under Title VI, Section 603 of FLPMA and Section 2C of the Wilderness Act of 1964. These characteristics are: (1) generally appears to have been affected mainly by the forces of nature, with human imprints substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres or is large enough to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Wilderness: A Congressionally designated area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation that is protected and managed to preserve its natural conditions as described in Section 2A of the Wilderness Act of 1964.

Wildfire: Unplanned ignition of a wildland fire (such as a fire caused by lightning, volcanoes, and unauthorized and accidental human-caused fires) and escaped prescribed fires.

Wildland fire: A general term describing any non-structure fire that occurs in the wildland.

Woodland: A forest community occupied primarily by noncommercial species such as juniper, mountain mahogany, or quaking aspen groves; all western juniper forestlands are classified as woodlands, since juniper is classified as a noncommercial species.

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APPENDIX A

Resources, Objects, and Values Identified within the Bears Ears National Monument



NATIONAL MONUMENTS

The Antiquities Act of 1906 grants the President authority to designate national monuments to protect “objects of historic or scientific interest.” Since 1906, Presidents and Congress have designated more than 125 national monuments, 27 of which are maintained by the Bureau of Land Management (BLM). Since 1911, the Antiquities Act has also been used at least 18 times by Presidents to reduce the size of 16 national monuments. On December 28, 2016, President Barack Obama designated the Bears Ears National Monument (BENM) by Presidential Proclamation 9558. On December 4, 2017, President Donald J. Trump modified the BENM by Presidential Proclamation 9681. The text of both proclamations is provided within this appendix.

The BLM’s Monuments are managed as part of the National Landscape Conservation System; its mission is to conserve, protect, and restore nationally significant landscapes recognized by the President or Congress for their outstanding ecological, cultural, or scientific resources and values.

According to BLM policy (Manual 6220) and Federal court precedent, the Federal Land Policy and Management Act (FLPMA) mandate requiring the BLM to manage public lands for multiple use and sustained yield includes managing specially designated public lands for the purposes for which they were designated.

The BLM’s objectives in managing a National Monument are as follows:

- A. Comply with the presidential proclamations by conserving, protecting, and restoring the objects and values for which the Monument was designated for the benefit of present and future generations.
- B. Effectively manage valid existing rights and compatible uses within a Monument.
- C. Manage discretionary uses within a Monument to ensure the protection of the objects and values for which the Monument was designated.
- D. Utilize science, local knowledge, partnerships, and volunteers to effectively manage a Monument.
- E. Provide appropriate recreational opportunities, education, interpretation, and visitor services to enhance the public’s understanding and enjoyment of a Monument.

The BLM is also required to inventory and monitor the objects and values for which a Monument was designated. Identification of the location and extent of such objects and values is critically important, as the BLM must ensure the compatibility of any uses within a Monument with the protection of objects and values. A discussion of resources, objects, and values within the BENM can be found immediately following the Proclamations in this appendix.

Proclamation 9558

Establishment of the Bears Ears National Monument by the President of the United States of America

A PROCLAMATION

Rising from the center of the southeastern Utah landscape and visible from every direction are twin buttes so distinctive that in each of the native languages of the region their name is the same: Hoon'Naqvut, Shash Jáa, Kwiyaġatu Nukavachi, Ansh An Lashokdiwe, or "Bears Ears." For hundreds of generations, native peoples lived in the surrounding deep sandstone canyons, desert mesas, and

meadow mountaintops, which constitute one of the densest and most significant cultural landscapes in the United States. Abundant rock art, ancient cliff dwellings, ceremonial sites, and countless other artifacts provide an extraordinary archaeological and cultural record that is important to us all, but most notably the land is profoundly sacred to many Native American tribes, including the Ute Mountain Ute Tribe, Navajo Nation, Ute Indian Tribe of the Uintah Ouray, Hopi Nation, and Zuni Tribe.

The area's human history is as vibrant and diverse as the ruggedly beautiful landscape. From the earliest occupation, native peoples left traces of their presence. Clovis people hunted among the cliffs and canyons of Cedar Mesa as early as 13,000 years ago, leaving behind tools and projectile points in places like the Lime Ridge Clovis Site, one of the oldest known archaeological sites in Utah. Archaeologists believe that these early people hunted mammoths, ground sloths, and other now-extinct megafauna, a narrative echoed by native creation stories. Hunters and gatherers continued to live in this region in the Archaic Period, with sites dating as far back as 8,500 years ago.

Ancestral Puebloans followed, beginning to occupy the area at least 2,500 years ago, leaving behind items from their daily life such as baskets, pottery, and weapons. These early farmers of Basketmaker II, and III and builders of Pueblo I, II and III left their marks on the land. The remains of single family dwellings, granaries, kivas, towers, and large villages and roads linking them together reveal a complex cultural history. "Moki steps," hand and toe holds carved into steep canyon walls by the Ancestral Puebloans, illustrate the early people's ingenuity and perseverance and are still used today to access dwellings along cliff walls. Other, distinct cultures have thrived here as well—the Fremont People, Numic- and Athabaskan-speaking hunter-gatherers, and Utes and Navajos. Resources such as the Doll House Ruin in Dark Canyon Wilderness Area and the Moon House Ruin on Cedar Mesa allow visitors to marvel at artistry and architecture that have withstood thousands of seasons in this harsh climate.

The landscape is a milieu of the accessible and observable together with the inaccessible and hidden. The area's petroglyphs and pictographs capture the imagination with images dating back at least 5,000 years and spanning a range of styles and traditions. From life-size ghostlike figures that defy categorization, to the more literal depictions of bighorn sheep, birds, and lizards, these drawings enable us to feel the humanity of these ancient artists. The Indian Creek area contains spectacular rock art, including hundreds of petroglyphs at Newspaper Rock. Visitors to Bears Ears can also discover more recent rock art left by the Ute, Navajo, and Paiute peoples. It is also the less visible sites, however—those that supported the food gathering, subsistence and ceremony of daily life—that tell the story of the people who lived here. Historic remnants of Native American sheep-herding and farming are scattered throughout the area, and pottery and Navajo hogans record the lifeways of native peoples in the 19th and 20th centuries.

For thousands of years, humans have occupied and stewarded this land. With respect to most of these people, their contribution to the historical record is unknown, but some have played a more public role. Famed Navajo headman K'aayéllii was born around 1800 near the twin Bears Ears buttes. His band used the area's remote canyons to elude capture by the U.S. Army and avoid the fate that befell many other Navajo bands: surrender, the Long Walk, and forced relocation to Bosque Redondo. Another renowned 19th century Navajo leader, "Hastiin Ch'ihajin" Manuelito, was also born near the Bears Ears.

The area's cultural importance to Native American tribes continues to this day. As they have for generations, these tribes and their members come here for ceremonies and to visit sacred sites. Throughout the region, many landscape features, such as Comb Ridge, the San Juan River, and Cedar Mesa, are closely tied to native stories of creation, danger, protection, and healing. The towering spires in the Valley of the Gods are sacred to the Navajo, representing ancient Navajo

warriors frozen in stone. Traditions of hunting, fishing, gathering, and wood cutting are still practiced by tribal members, as is collection of medicinal and ceremonial plants, edible herbs, and materials for crafting items like baskets and footwear. The traditional ecological knowledge amassed by the Native Americans whose ancestors inhabited this region, passed down from generation to generation, offers critical insight into the historic and scientific significance of the area. Such knowledge is, itself, a resource to be protected and used in understanding and managing this landscape sustainably for generations to come.

Euro-Americans first explored the Bears Ears area during the 18th century, and Mormon settlers followed in the late 19th century. The San Juan Mission expedition traversed this rugged country in 1880 on their journey to establish a new settlement in what is now Bluff, Utah. To ease the passage of wagons over the slick rock slopes and through the canyonlands, the settlers smoothed sections of the rock surface and constructed dugways and other features still visible along their route, known as the Hole-in-the-Rock Trail. Cabins, corrals, trails, and carved inscriptions in the rock reveal the lives of ranchers, prospectors, and early archaeologists. Cattle rustlers and other outlaws created a convoluted trail network known as the Outlaw Trail, said to be used by Butch Cassidy and the Sundance Kid. These outlaws took advantage of the area's network of canyons, including the aptly-named Hideout Canyon, to avoid detection.

The area's stunning geology, from sharp pinnacles to broad mesas, labyrinthine canyons to solitary hoodoos, and verdant hanging gardens to bare stone arches and natural bridges, provides vital insights to geologists. In the east, the Abajo Mountains tower, reaching elevations of more than 11,000 feet. A long geologic history is documented in the colorful rock layers visible in the area's canyons.

For long periods over 300 million years ago, these lands were inundated by tropical seas and hosted thriving coral reefs. These seas infused the area's black rock shale with salts as they receded. Later, the lands were bucked upwards multiple times by the Monument Upwarp, and near-volcanoes punched up through the rock, leaving their marks on the landscape without reaching the surface. In the sandstone of Cedar Mesa, fossil evidence has revealed large, mammal-like reptiles that burrowed into the sand to survive the blistering heat of the end of the Permian Period, when the region was dominated by a seaside desert. Later, in the Late Triassic Period more than 200 million years ago, seasonal monsoons flooded an ancient river system that fed a vast desert here.

The paleontological resources in the Bears Ears area are among the richest and most significant in the United States, and protection of this area will provide important opportunities for further paleontological study. Many sites, such as Arch Canyon, are teeming with fossils, and research conducted in the Bears Ears area is revealing new insights into the transition of vertebrate life from reptiles to mammals and from sea to land. Numerous ray-finned fish fossils from the Permian Period have been discovered, along with other late Paleozoic Era fossils, including giant amphibians, synapsid reptiles, and important plant fossils. Fossilized traces of marine and aquatic creatures such as clams, crayfish, fish, and aquatic reptiles have been found in Indian Creek's Chinle Formation, dating to the Triassic Period, and phytosaur and dinosaur fossils from the same period have been found along Comb Ridge. Paleontologists have identified new species of plant-eating crocodile-like reptiles and mass graves of lumbering sauropods, along with metoposaurus, crocodiles, and other dinosaur fossils. Fossilized trackways of early tetrapods can be seen in the Valley of the Gods and in Indian Creek, where paleontologists have also discovered exceptional examples of fossilized ferns, horsetails, and cycads. The Chinle Formation and the Wingate, Kayenta, and Navajo Formations above it provide one of the best continuous rock records of the Triassic-Jurassic transition in the world, crucial to understanding how dinosaurs dominated terrestrial ecosystems and how our mammalian ancestors evolved. In Pleistocene Epoch sediments, scientists have found traces of mammoths, short-faced bears, ground sloths, primates, and camels.

From earth to sky, the region is unsurpassed in wonders. The star-filled nights and natural quiet of the Bears Ears area transport visitors to an earlier eon. Against an absolutely black night sky, our galaxy and others more distant leap into view. As one of the most intact and least roaded areas in the contiguous United States, Bears Ears has that rare and arresting quality of deafening silence.

Communities have depended on the resources of the region for hundreds of generations. Understanding the important role of the green highlands in providing habitat for subsistence plants and animals, as well as capturing and filtering water from passing storms, the Navajo refer to such places as "Nahodishgish," or places to be left alone. Local communities seeking to protect the mountains for their watershed values have long recognized the importance of the Bears Ears' headwaters. Wildfires, both natural and human-set, have shaped and maintained forests and grasslands of this area for millennia. Ranchers have relied on the forests and grasslands of the region for ages, and hunters come from across the globe for a chance at a bull elk or other big game. Today, ecological restoration through the careful use of wildfire and management of grazing and timber is working to restore and maintain the health of these vital watersheds and grasslands.

The diversity of the soils and microenvironments in the Bears Ears area provide habitat for a wide variety of vegetation. The highest elevations, in the Elk Ridge area of the Manti-La Sal National Forest, contain pockets of ancient Engelmann spruce, ponderosa pine, aspen, and subalpine fir. Mesa tops include pinyon-juniper woodlands along with big sagebrush, low sage, blackbrush, rabbitbrush, bitterbrush, four-wing saltbush, shadscale, winterfat, Utah serviceberry, western chokecherry, hackberry, barberry, cliff rose, and greasewood. Canyons contain diverse vegetation ranging from yucca and cacti such as prickly pear, claret cup, and Whipple's fishhook to mountain mahogany, ponderosa pine, alder, sagebrush, birch, dogwood, and Gambel's oak, along with occasional stands of aspen. Grasses and herbaceous species such as bluegrass, bluestem, giant ryegrass, ricegrass, needle and thread, yarrow, common mallow, balsamroot, low larkspur, horsetail, and peppergrass also grow here, as well as pinnate spring parsley, Navajo penstemon, Canyonlands lomatium, and the Abajo daisy.

Tucked into winding canyons are vibrant riparian communities characterized by Fremont cottonwood, western sandbar willow, yellow willow, and box elder. Numerous seeps provide year-round water and support delicate hanging gardens, moisture-loving plants, and relict species such as Douglas fir. A few populations of the rare Kachina daisy, endemic to the Colorado Plateau, hide in shaded seeps and alcoves of the area's canyons. A genetically distinct population of Kachina daisy was also found on Elk Ridge. The alcove columbine and cave primrose, also regionally endemic, grow in seeps and hanging gardens in the Bears Ears landscape. Wildflowers such as beardtongue, evening primrose, aster, Indian paintbrush, yellow and purple beeflower, straight bladderpod, Durango tumble mustard, scarlet gilia, globe mallow, sand verbena, sego lily, cliffrose, sacred datura, monkey flower, sunflower, prince's plume, hedgehog cactus, and columbine, bring bursts of color to the landscape.

The diverse vegetation and topography of the Bears Ears area, in turn, support a variety of wildlife species. Mule deer and elk range on the mesas and near canyon heads, which provide crucial habitat for both species. The Cedar Mesa landscape is home to bighorn sheep which were once abundant but still live in Indian Creek, and in the canyons north of the San Juan River. Small mammals such as desert cottontail, black-tailed jackrabbit, prairie dog, Botta's pocket gopher, white-tailed antelope squirrel, Colorado chipmunk, canyon mouse, deer mouse, pinyon mouse, and desert woodrat, as well as Utah's only population of Abert's tassel-eared squirrels, find shelter and sustenance in the landscape's canyons and uplands. Rare shrews, including a variant of Merriam's shrew and the dwarf shrew can be found in this area.

Carnivores, including badger, coyote, striped skunk, ringtail, gray fox, bobcat, and the occasional mountain lion, all hunt here, while porcupines use their sharp quills and climbing abilities to escape these predators. Oral histories from the Ute describe the historic presence of bison, antelope, and abundant bighorn sheep, which are also depicted in ancient rock art. Black bear pass through the area but are rarely seen, though they are common in the oral histories and legends of this region, including those of the Navajo.

Consistent sources of water in a dry landscape draw diverse wildlife species to the area's riparian habitats, including an array of amphibian species such as tiger salamander, red-spotted toad, Woodhouse's toad, canyon tree frog, Great Basin spadefoot, and northern leopard frog. Even the most sharp-eyed visitors probably will not catch a glimpse of the secretive Utah night lizard. Other reptiles in the area include the sagebrush lizard, eastern fence lizard, tree lizard, side-blotched lizard, plateau striped whiptail, western rattlesnake, night snake, striped whipsnake, and gopher snake.

Raptors such as the golden eagle, peregrine falcon, bald eagle, northern harrier, northern goshawk, red-tailed hawk, ferruginous hawk, American kestrel, flammulated owl, and great horned owl hunt their prey on the mesa tops with deadly speed and accuracy. The largest contiguous critical habitat for the threatened Mexican spotted owl is on the Manti-La Sal National Forest. Other bird species found in the area include Merriam's turkey, Williamson's sapsucker, common nighthawk, white-throated swift, ash-throated flycatcher, violet-green swallow, cliff swallow, mourning dove, pinyon jay, sagebrush sparrow, canyon towhee, rock wren, sage thrasher, and the endangered southwestern willow flycatcher.

As the skies darken in the evenings, visitors may catch a glimpse of some the area's at least 15 species of bats, including the big free-tailed bat, pallid bat, Townsend's big-eared bat, spotted bat, and silver-haired bat. Tinajas, rock depressions filled with rainwater, provide habitat for many specialized aquatic species, including pothole beetles and freshwater shrimp. Eucosma navajoensis, an endemic moth that has only been described near Valley of the Gods, is unique to this area.

Protection of the Bears Ears area will preserve its cultural, prehistoric, and historic legacy and maintain its diverse array of natural and scientific resources, ensuring that the prehistoric, historic, and scientific values of this area remain for the benefit of all Americans. The Bears Ears area has been proposed for protection by members of Congress, Secretaries of the Interior, State and tribal leaders, and local conservationists for at least 80 years. The area contains numerous objects of historic and of scientific interest, and it provides world class outdoor recreation opportunities, including rock climbing, hunting, hiking, backpacking, canyoneering, whitewater rafting, mountain biking, and horseback riding. Because visitors travel from near and far, these lands support a growing travel and tourism sector that is a source of economic opportunity for the region.

WHEREAS, section 320301 of title 54, United States Code (known as the "Antiquities Act"), authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Federal Government to be national monuments, and to reserve as a part thereof parcels of land, the limits of which shall be confined to the smallest area compatible with the proper care and management of the objects to be protected;

WHEREAS, it is in the public interest to preserve the objects of scientific and historic interest on the Bears Ears lands;

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by the authority vested in me by section 320301 of title 54, United States Code, hereby proclaim the objects identified above that are situated upon lands and interests in lands owned or controlled by the Federal Government to be the Bears Ears National Monument (monument) and, for the purpose of protecting those objects, reserve as part thereof all lands and interests in lands owned or controlled by the Federal Government within the boundaries described on the accompanying map, which is attached to and forms a part of this proclamation. These reserved Federal lands and interests in lands encompass approximately 1.35 million acres. The boundaries described on the accompanying map are confined to the smallest area compatible with the proper care and management of the objects to be protected.

All Federal lands and interests in lands within the boundaries of the monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, or other disposition under the public land laws or laws applicable to the U.S. Forest Service, from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument.

The establishment of the monument is subject to valid existing rights, including valid existing water rights. If the Federal Government acquires ownership or control of any lands or interests in lands that it did not previously own or control within the boundaries described on the accompanying map, such lands and interests in lands shall be reserved as a part of the monument, and objects identified above that are situated upon those lands and interests in lands shall be part of the monument, upon acquisition of ownership or control by the Federal Government.

The Secretary of Agriculture and the Secretary of the Interior (Secretaries) shall manage the monument through the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM), pursuant to their respective applicable legal authorities, to implement the purposes of this proclamation. The USFS shall manage that portion of the monument within the boundaries of the National Forest System (NFS), and the BLM shall manage the remainder of the monument. The lands administered by the USFS shall be managed as part of the Manti-La Sal National Forest. The lands administered by the BLM shall be managed as a unit of the National Landscape Conservation System, pursuant to applicable legal authorities.

For purposes of protecting and restoring the objects identified above, the Secretaries shall jointly prepare a management plan for the monument and shall promulgate such regulations for its management as they deem appropriate. The Secretaries, through the USFS and the BLM, shall consult with other Federal land management agencies in the local area, including the National Park Service, in developing the management plan. In promulgating any management rules and regulations governing the NFS lands within the monument and developing the management plan, the Secretary of Agriculture, through the USFS, shall consult with the Secretary of the Interior through the BLM. The Secretaries shall provide for maximum public involvement in the development of that plan including, but not limited to, consultation with federally recognized tribes and State and local governments. In the development and implementation of the management plan, the Secretaries shall maximize opportunities, pursuant to applicable legal authorities, for shared resources, operational efficiency, and cooperation.

The Secretaries, through the BLM and USFS, shall establish an advisory committee under the Federal Advisory Committee Act (5 U.S.C. App.) to provide information and advice regarding the development of the management plan and, as appropriate, management of the monument. This advisory committee shall consist of a fair and balanced representation of interested stakeholders, including State and local governments, tribes, recreational users, local business owners, and private landowners.

In recognition of the importance of tribal participation to the care and management of the objects identified above, and to ensure that management decisions affecting the monument reflect tribal expertise and traditional and historical knowledge, a Bears Ears Commission (Commission) is hereby established to provide guidance and recommendations on the development and implementation of management plans and on management of the monument. The Commission shall consist of one elected officer each from the Hopi Nation, Navajo Nation, Ute Mountain Ute Tribe, Ute Indian Tribe of the Uintah Ouray, and Zuni Tribe, designated by the officers' respective tribes. The Commission may adopt such procedures as it deems necessary to govern its activities, so that it may effectively partner with the Federal agencies by making continuing contributions to inform decisions regarding the management of the monument.

The Secretaries shall meaningfully engage the Commission or, should the Commission no longer exist, the tribal governments through some other entity composed of elected tribal government officers (comparable entity), in the development of the management plan and to inform subsequent management of the monument. To that end, in developing or revising the management plan, the Secretaries shall carefully and fully consider integrating the traditional and historical knowledge and special expertise of the Commission or comparable entity. If the Secretaries decide not to incorporate specific recommendations submitted to them in writing by the Commission or comparable entity, they will provide the Commission or comparable entity with a written explanation of their reasoning. The management plan shall also set forth parameters for continued meaningful engagement with the Commission or comparable entity in implementation of the management plan.

To further the protective purposes of the monument, the Secretary of the Interior shall explore entering into a memorandum of understanding with the State that would set forth terms, pursuant to applicable laws and regulations, for an exchange of land currently owned by the State of Utah and administered by the Utah School and Institutional Trust Lands Administration within the boundary of the monument for land of approximately equal value managed by the BLM outside the boundary of the monument. The Secretary of the Interior shall report to the President by January 19, 2017, regarding the potential for such an exchange.

Nothing in this proclamation shall be construed to interfere with the operation or maintenance, or the replacement or modification within the current authorization boundary, of existing utility, pipeline, or telecommunications facilities located within the monument in a manner consistent with the care and management of the objects identified above.

Nothing in this proclamation shall be deemed to enlarge or diminish the rights or jurisdiction of any Indian tribe. The Secretaries shall, to the maximum extent permitted by law and in consultation with Indian tribes, ensure the protection of Indian sacred sites and traditional cultural properties in the monument and provide access by members of Indian tribes for traditional cultural and customary uses, consistent with the American Indian Religious Freedom Act (42 U.S.C. 1996) and Executive Order 13007 of May 24, 1996 (Indian Sacred Sites), including collection of medicines, berries and other vegetation, forest products, and firewood for personal noncommercial use in a manner consistent with the care and management of the objects identified above.

For purposes of protecting and restoring the objects identified above, the Secretaries shall prepare a transportation plan that designates the roads and trails where motorized and non-motorized mechanized vehicle use will be allowed. Except for emergency or authorized administrative purposes, motorized and non-motorized mechanized vehicle use shall be allowed only on roads and trails designated for such use, consistent with the care and management of such objects. Any additional roads or trails designated for motorized vehicle use must be for the purposes of public safety or protection of such objects.

Laws, regulations, and policies followed by USFS or BLM in issuing and administering grazing permits or leases on lands under their jurisdiction shall continue to apply with regard to the lands in the monument to ensure the ongoing consistency with the care and management of the objects identified above.

Nothing in this proclamation shall be deemed to enlarge or diminish the jurisdiction of the State of Utah, including its jurisdiction and authority with respect to fish and wildlife management.

Nothing in this proclamation shall preclude low-level overflights of military aircraft, the designation of new units of special use airspace, or the use or establishment of military flight training routes over the lands reserved by this proclamation consistent with the care and management of the objects identified above.

Nothing in this proclamation shall be construed to alter the authority or responsibility of any party with respect to emergency response activities within the monument, including wildland fire response.

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the monument shall be the dominant reservation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of the monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this twenty-eighth day of December, in the year of our Lord two thousand sixteen, and of the Independence of the United States of America the two hundred and forty-first.

BARACK OBAMA

Proclamation 9681

Modifying the Bears Ears National Monument by The President of the United States of America

A PROCLAMATION

In Proclamation 9558 of December 28, 2016, and exercising his authority under section 320301 of title 54, United States Code (the “Antiquities Act”), President Barack Obama established the Bears Ears National Monument in the State of Utah, reserving approximately 1.35 million acres of Federal lands for the care and management of objects of historic and scientific interest identified therein. The monument is managed jointly by the Department of the Interior’s Bureau of Land Management (BLM) and the Department of Agriculture’s United States Forest Service (USFS). This proclamation makes certain modifications to the monument.

Proclamation 9558 identifies a long list of objects of historic or scientific interest. It describes cultural resources such as ancient cliff dwellings (including the Moon House and Doll House Ruins), Moki Steps, Native American ceremonial sites, tools and projectile points, remains of single-family dwellings, granaries, kivas, towers, large villages, rock shelters, caves, and a prehistoric road system, as well as petroglyphs, pictographs, and recent rock art left by the Ute, Navajo, and Paiute peoples. It also identifies other types of historic objects, such as remnants of Native American sheep-herding and farming operations and early engineering by pioneers and settlers, including smoothed sections of rock, dugways, historic cabins, corrals, trails, and inscriptions carved into rock, and the Hole-in-the-Rock and Outlaw Trails. It also describes landscape features such as the Bears Ears, Comb Ridge, Cedar Mesa, the Valley of the Gods, the Abajo Mountains, and the San Juan River, and paleontological resources such as the fossil remains of fishes, amphibians, reptiles, and mammals, as well as dinosaur trackways and traces of other terrestrial animals. Finally, it identifies several species, including animals like the porcupine, badger, and coyote; birds like the red-tailed hawk, Mexican spotted owl, American kestrel, and turkey vulture; and plants such as the Fremont cottonwood, Abajo daisy, western sandbar willow, and boxelder.

The Antiquities Act requires that any reservation of land as part of a monument be confined to the smallest area compatible with the proper care and management of the objects of historic or scientific interest to be protected. Determining the appropriate protective area involves examination of a number of factors, including the uniqueness and nature of the objects, the nature of the needed protection, and the protection provided by other laws.

Some of the objects Proclamation 9558 identifies are not unique to the monument, and some of the particular examples of these objects within the monument are not of significant scientific or historic interest. Moreover, many of the objects Proclamation 9558 identifies were not under threat of damage or destruction before designation such that they required a reservation of land to protect them. In fact, objects described in Proclamation 9558 were then—and still are—subject to Federal protections under existing laws and agency management designations. For example, more than 500,000 acres were already being managed to maintain, enhance, or protect their roadless character before they were designated as part of a national monument. Specifically, the BLM manages approximately 380,759 acres of lands within the existing monument as Wilderness Study Areas, which the BLM is required by law to manage so as not to impair their suitability for future congressional designation as Wilderness. On lands managed by the USFS, 46,348 acres are part of the congressionally designated Dark Canyon Wilderness Area, which, under the 1964 Wilderness Act, 16 U.S.C. 1131–1136, and the Utah Wilderness Act of 1984, Public Law 98–428, the USFS must manage so as to maintain or enhance its wilderness character. Approximately 89,396 acres of the USFS lands are also included in 8 inventoried roadless areas, which are managed under the USFS’s 2001 Roadless Rule so as to protect their wilderness character.

A host of laws enacted after the Antiquities Act provide specific protection for archaeological, historic, cultural, paleontological, and plant and animal resources and give authority to the BLM and USFS to condition permitted activities on Federal lands, whether within or outside a monument. These laws include the Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa–470mm, National Historic Preservation Act, 54 U.S.C. 300101 et seq., Bald and Golden Eagle Protection Act, 16 U.S.C. 668–668d, Endangered Species Act of 1973, 16 U.S.C. 1531 et seq., Federal Cave Resources Protection Act of 1988, 16 U.S.C. 4301 et seq., Federal Land Policy and Management Act of 1976, 43 U.S.C. 1701 et seq., Migratory Bird Treaty Act, 16 U.S.C. 703–712, National Forest Management Act, 16 U.S.C. 1600 et seq., Native American Graves Protection and Repatriation Act of 1976, 25 U.S.C. 3001 et seq., and Paleontological Resources Preservation Act, 16 U.S.C. 470aaa–470aaa–11. Of particular note, the Archaeological Resources Protection Act specifically protects archaeological resources from looting or other desecration and imposes criminal penalties for unauthorized excavation, removal, damage, alteration, or defacement of archaeological resources. Federal land management agencies can grant a permit authorizing excavation or removal, but only when undertaken for the purpose of furthering archaeological knowledge. The Paleontological Resources Preservation Act contains very similar provisions protecting paleontological resources. And the Migratory Bird Treaty Act and Endangered Species Act protect migratory birds and listed endangered and threatened species and their habitats. Moreover, the BLM and the USFS were already addressing many of the threats to objects identified in Proclamation 9558 in their governing land-use plans before designation of the monument.

Given the nature of the objects identified on the lands reserved by Proclamation 9558, the lack of a threat of damage or destruction to many of those objects, and the protection for those objects already provided by existing law and governing land-use plans, I find that the area of Federal land reserved in the Bears Ears National Monument established by Proclamation 9558 is not confined to the smallest area compatible with the proper care and management of those objects. The important objects of scientific or historic interest can instead be protected by a smaller and more appropriate reservation of 2 areas: Shash Jáa and Indian Creek. Revising the boundaries of the monument to cover these 2 areas will ensure that, in accordance with the Antiquities Act, it is no larger than necessary for the proper care and management of the objects to be protected within the monument.

The Shash Jáa area contains the heart of the national monument: the iconic twin buttes known as the Bears Ears that tower 2,000 feet above the surrounding landscape and are considered sacred to the Native American tribes that call this area their ancestral home. Many of the significant objects described by Proclamation 9558 can be found throughout the Shash Jáa area. Ancestral Puebloan occupation of the area began during the Basketmaker II period at least 2,500 years ago, and it left behind objects such as pit houses, storage pits, lithic scatters, campsites, rock shelters, pictographs, and baskets, as well as manos and metates for grinding corn. Occupation dating to the Basketmaker III period, from approximately 500 to 750 C.E., left additional evidence of maize- and bean-based agriculture, along with pottery, bows and arrows, pit houses, kivas, storage rooms, and dispersed villages.

New waves of human settlement occurred around 900 C.E., when the Pueblo I period gave rise to large villages near Comb Wash, and 1050 C.E., when inhabitants from the Pueblo II period built expansive and complex multi-family dwellings. Around 1150 C.E., the dawn of the Pueblo III period, the area's inhabitants increasingly sought shelter in cliff dwellings and left behind evidence of an era of unrest. Several centuries later, the Ute, Paiute, and Navajo came to occupy the area.

East of the Bears Ears is Arch Canyon, within which paleontologists have found numerous fossils from the Permian and Upper Permian eras. Cliff dwellings are hidden throughout the canyon, and the mouth of the canyon holds the fabled Arch Canyon ruin, which spans the Pueblo II and III periods and contains pictographs and petroglyphs ranging from the Archaic to the historic periods.

Just south of Arch Canyon are the north and south forks of Mule Canyon. Five-hundred feet deep, 5 miles long, and decorated with alternating layers of red and white sandstone, these 2 striking canyons contain shelter-cliff dwellings and other archaeological sites, including the scenic and accessible House on Fire Ruin, which includes differing masonry styles that indicate several episodes of construction and use.

Perched high on the open tablelands above the south fork of Mule Canyon are the Mule Canyon ruins, where visitors can see exposed masonry walls of ancient living quarters and a partially restored kiva. The deep canyons and towering mesas of the Shash Jáa area are full of similar sites, including rock art, remains of single-family dwellings, granaries, kivas, towers (including the Cave Towers), and large villages primarily from the Pueblo II and III periods, along with sites from the Basketmaker and Archaic periods.

The Shash Jáa area also includes Comb Ridge, a north-south trending monocline that originates near the boundary of the Manti-La Sal National Forest, ends near the San Juan River, and contains remnants from the region's thousands of years of human habitation, including cliff dwellings, granaries, kivas, ceremonial sites, and the Butler Wash ruin, a world-famous Ancestral Puebloan ruin with multiple rooms and kivas. Comb Ridge also includes world-class examples of ancient rock art, such as the Butler Wash Kachina Panel, a wall-sized mural of San Juan Anthropomorph figures that dates to the Basketmaker period and is considered to be one of the Southwest's most important petroglyph panels for understanding the daily life and rituals of the Basketmaker people. Significant fossil sites have also been discovered in Butler Wash.

Just north of upper Butler Wash, the aspen-filled Whiskers Draw contains a series of alcoves that have sheltered evidence of human habitation for thousands of years, including Cave 7, the site where Richard Wetherill, as part of the Hyde Expedition in 1893, first identified what we know today as the Basketmaker people. The nearby Milk Ranch Point is home to a rich concentration of kivas, granaries, dwellings, and other evidence that Pueblo I farmers used this area to cultivate corn, beans, and squash.

*The Shash Jáa area also contains the Comb Ridge Fossil site, which includes a trackway created by a giant arthropod (*Diplichnites cuithensis*), the first recorded instance of such a trackway in Utah. Also, the diverse landscape of the Shash Jáa area provides habitat for the vast majority of plant and animal species described by Proclamation 9558.*

Finally, the Shash Jáa area as described on the accompanying map includes 2 non-contiguous parcels of land that encompass the Moon House Ruin, an example of iconic Pueblo-decorated architecture, which was likely the last occupied site on Cedar Mesa, as well as Doll House Ruin, a fully intact and well-preserved single room granary that is associated with an extensive agricultural area on the mesa top. These significant ruins are important examples of cultural resource objects that should remain within the monument's boundaries.

The Indian Creek area likewise contains objects of significance described in Proclamation 9558. At its center is the broad Indian Creek Canyon, which is characterized by sheer red cliffs and spires of exposed and eroded layers of Navajo, Kayenta, Wingate, and Cedar Mesa sandstone, including the iconic North and South Six-Shooter Peaks.

Also located within the Indian Creek area is the Canyonlands Research Center. Spanning lands managed by the National Park Service, BLM, USFS, and private landowners, this unique partnership works to increase our understanding of the complex natural systems on the landscape, providing their custodians with information they need to adapt to the challenges of a changing Colorado Plateau.

Newspaper Rock, a popular attraction in the Indian Creek area, is a roadside rock art panel that has been listed on the National Register of Historic Places since 1976. This site displays a significant concentration of rock art from multiple periods, etched into Wingate sandstone. The older art is attributed to the Ancestral Puebloan people who inhabited this region for 2,000 years, while the more recent rock art is attributed to the Ute people who still live in the Four Corners area.

In addition to Newspaper Rock, the Indian Creek area contains numerous other significant rock art sites, including the distinctive and well-preserved petroglyphs in Shay Canyon. The area also provides opportunities for cultural and scientific research and paleontological study. Dinosaur tracks in the bottom of the Shay Canyon stream bed are a unique visual reminder of the area's distant past. Additional paleontological resources can be found throughout the Indian Creek area, including vertebrate and invertebrate fossils, primarily in the Chinle Formation. The Indian Creek area also includes 2 prominent mesas, Bridger Jack Mesa and Lavender Mesa, which are home to relict plant communities, predominantly composed of pinyon-juniper woodland, with small, interspersed sagebrush parks, that exist only on these isolated islands in the desert sea and are, generally, unaltered by humans. These mesas provide the opportunity for comparative studies of pinyon-juniper woodland and sagebrush communities in other parts of the Colorado Plateau. Additionally, the Indian Creek area includes the exposed Chinle Formation, known for abundant fossilized flora and fauna, including pelecypods, gastropods, arthropods, fishes, amphibians, and reptiles (including dinosaurs). Finally, the area is well known for vertebrate trackways, including tetrapod footprints.

Some of the existing monument's objects, or certain examples of those objects, are not within the monument's revised boundaries because they are adequately protected by existing law, designation, agency policy, or governing land-use plans. For example, although the modified boundaries do not include the San Juan River or the Valley of the Gods, both of those areas are protected by existing administratively designated Areas of Critical Environmental Concern. Plant and animal species such as the bighorn sheep, the Kachina daisy, the Utah night lizard, and the Eucosma navajoensis moth are protected by the Endangered Species Act and existing land-use plans and policies protecting special-status species. Additionally, some of the range of these species falls within existing Wilderness Areas and Wilderness Study Areas. Finally, although Hideout Canyon is likewise not included within the modified boundaries, it is generally not threatened and is partially within a Wilderness Study Area.

The areas described above are the smallest compatible with the protection of the important objects identified in Proclamation 9558. The modification of the Bears Ears National Monument will maintain and protect those objects and preserve the area's cultural, scientific, and historic legacy.

WHEREAS, Proclamation 9558 of December 28, 2016, designated the Bears Ears National Monument in the State of Utah and reserved approximately 1.35 million acres of Federal lands for the care and management of the Bears Ears buttes and other objects of historic and scientific interest identified therein; and

WHEREAS, many of the objects identified by Proclamation 9558 are otherwise protected by Federal law; and

WHEREAS, it is in the public interest to modify the boundaries of the monument to exclude from its designation and reservation approximately 1,150,860 acres of land that I find are unnecessary for the care and management of the objects to be protected within the monument; and

WHEREAS, the boundaries of the monument reservation should therefore be reduced to the smallest area compatible with the protection of the objects of scientific or historic interest as described above in this proclamation;

NOW, THEREFORE, I, DONALD J. TRUMP, President of the United States of America, by the authority vested in me by section 320301 of title 54, United States Code, hereby proclaim that the boundaries of the Bears Ears National Monument are hereby modified and reduced to those lands and interests in land owned or controlled by the Federal Government within the boundaries described on the accompanying map, which is attached to and forms a part of this proclamation. I hereby further proclaim that the modified monument areas identified on the accompanying map shall be known as the Indian Creek and Shash Jáa units of the monument, the latter of which shall include the Moon House and Doll House Ruins. These reserved Federal lands and interests in lands cumulatively encompass approximately 201,876 acres. The boundaries described on the accompanying map are confined to the smallest area compatible with the proper care and management of the objects to be protected. Any lands reserved by Proclamation 9558 not within the boundaries identified on the accompanying map are hereby excluded from the monument.

At 9:00 a.m., eastern standard time, on the date that is 60 days after the date of this proclamation, subject to valid existing rights, the provisions of existing withdrawals, and the requirements of applicable law, the public and National Forest System lands excluded from the monument reservation shall be open to:

- (1) entry, location, selection, sale, or other disposition under the public land laws and laws applicable to the U.S. Forest Service;**
- (2) disposition under all laws relating to mineral and geothermal leasing; and**
- (3) location, entry, and patent under the mining laws.**

Appropriation of lands under the mining laws before the date and time of restoration is unauthorized. Any such attempted appropriation, including attempted adverse possession under 30 U.S.C. 38, shall vest no rights against the United States. Acts required to establish a location and to initiate a right of possession are governed by State law where not in conflict with Federal law.

Nothing in this proclamation shall be construed to remove any lands from the Manti-La Sal National Forest or to otherwise revoke, modify, or affect any withdrawal, reservation, or appropriation, other than the one created by Proclamation 9558.

Nothing in this proclamation shall change the management of the areas designated and reserved by Proclamation 9558 that remain part of the monument in accordance with the terms of this proclamation, except as provided by the following 4 paragraphs:

In recognition of the importance of tribal participation to the care and management of the objects identified above, and to ensure that management decisions affecting the monument reflect tribal expertise and traditional and historical knowledge, Proclamation 9558 established a Commission to provide guidance and recommendations on the development and implementation of management plans and on management of the monument, and to partner with Federal agencies by making continuing contributions to inform decisions regarding the management of the monument. In order to ensure that the full range of tribal expertise and traditional historical knowledge is included in such guidance and recommendations, paragraph 29 of Proclamation 9558 is hereby revised to provide that the Bears Ears Commission shall be known as the Shash Jáa Commission, shall apply only to the Shash Jáa unit as described herein, and shall also include the elected officer of the San Juan County Commission representing District 3 acting in that officer's official capacity.

Proclamation 9558 is hereby revised to clarify that, pending preparation of the transportation plan required by paragraph 34 thereof, the Secretaries of the Interior and Agriculture may allow motorized and non-mechanized vehicle use on roads and trails designated for such use immediately before the issuance of Proclamation 9558 and maintain roads and trails for such use.

Paragraph 35 of Proclamation 9558 governing livestock grazing in the monument is hereby revised to read as follows: "Nothing in this proclamation shall be deemed to affect authorizations for livestock grazing, or administration thereof, on Federal lands within the monument. Livestock grazing within the monument shall continue to be governed by laws and regulations other than this proclamation."

Proclamation 9558 is amended to clarify that, consistent with the care and management of the objects identified above, the Secretaries of the Interior and Agriculture may authorize ecological restoration and active vegetation management activities in the monument.

If any provision of this proclamation, including its application to a particular parcel of land, is held to be invalid, the remainder of this proclamation and its application to other parcels of land shall not be affected thereby.

IN WITNESS WHEREOF, I have hereunto set my hand this fourth day of December, in the year of our Lord two thousand seventeen, and of the Independence of the United States of America the two hundred and forty-second.

DONALD J. TRUMP

IDENTIFICATION OF MONUMENT OBJECTS AND VALUES

The Antiquities Act makes multiple references to “objects,” which include “objects of antiquity” and “objects of historic or scientific interest.” Objects are listed in the proclamation or enabling legislation and may include cultural artifacts or features, historic structures, paleontological or geological features, specific plant or animal species or habitats, and other resources. The BLM has generally interpreted objects as discrete physical items. A national monument may also have less tangible values, such as provision of opportunities for research.

The BLM is required to manage national monuments for the proper care and management of the objects of historic and scientific interest for which they were designated. Identifying the specific objects in a proclamation is critical to proper management of a national monument and to determine the management actions necessary to implement the law and manage monuments for the purposes for which they were designated. While deference is always given to the specific text in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, the BLM must clearly identify the objects for the agency to properly undertake land use planning or other analysis to ensure proper management of a national monument.

While not unlimited, courts have affirmed the BLM’s discretion to determine which items listed in a proclamation are the actual objects to be protected. The BLM has not established a process or policy for the identification of national monument objects; however, under standard agency practices, interdisciplinary teams analyze the proclamation and determine the objects, usually as part of a land use planning process or in advance of an analysis under the National Environmental Policy Act.

The text of Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, describes numerous objects, as well as supporting information about the values and opportunities within the Monument. The following themes have been identified as objects and/or values in BENM: archaeological, historic, and cultural resources; geological features and landscapes; paleontological resources; biological and ecological resources and processes; recreational opportunities; and economic opportunities.

Archaeological, Historic, and Cultural Resources

Archaeological resources within BENM encompass both prehistoric and historic sites and include abundant rock writings, ancient cliff dwellings, ceremonial sites, and countless other sites and artifacts. Archaeological objects are restricted to those archaeological resources determined to be historic properties or archaeological resources either listed on or eligible for listing on the National Register of Historic Places (also defined at 36CFR800.16(l)). In this document, these resources are referred to as “eligible” sites.

Objects
<p>Generally, objects within BENM include the following:</p> <ul style="list-style-type: none"> • Eligible historic properties, including, but not limited to cliff dwellings, granaries, kivas, ceremonial sites, pit houses, storage pits, lithic scatters, prehistoric campsites, and other less visible sites; rockshelters, baskets, manos and metates, pottery, bows and arrows, footwear, storage rooms; tinajas; prehistoric road systems and Moki steps; evidence of the historic settlement of the region, including the Hole-in-the-Rock Trail, cabins, corrals, trails, and rock writings. • Petroglyphs and pictographs <p>Specific cultural, archaeological, or historical objects noted in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, within BENM include the following:</p> <ul style="list-style-type: none"> • Butler Wash Kachina Panel • Butler Wash Site • Arch Canyon Great House Complex • House on Fire Ruin • Arch Canyon Cultural Landscape • Texas Canyon Cultural Landscape • Butt Canyon Cultural Landscape • Mule Canyon Cultural Landscape • Whiskers Draw Cultural Landscape • Milk Ranch Point Cultural Landscape • Moon House Ruin • Doll House Ruin • Newspaper Rock • Shay Canyon Petroglyphs • Indian Creek Cultural Landscape • Bears Ears Buttes • Bears Ears Headwaters • Comb Ridge • Medicinal plants and plants for religious use • Hole-in-the-Rock Trail and San Juan Hill • American Indian sacred and religious sites
Values
<p>Opportunities for archaeological research, interpretation, and protection</p> <p>Cultural landscapes</p> <p>Preservation of prehistoric, historic, and cultural values and objects</p> <p>Tribal expertise and traditional ecological and historical knowledge</p> <p>Areas of religious use</p> <p>Opportunities for American Indian and historic rural communities to conduct subsistence activities (hunting, gathering, wood cutting, etc.)</p> <p>Native stories and traditional historical knowledge (Long Walk, etc.)</p> <p>Opportunities to use traditional, ecological, and religious knowledge and practices</p> <p>American Indian and Euro-American livestock grazing, including old structures (e.g., log troughs)</p> <p>Opportunities for cultural and heritage tourism</p>

Geological Features and Landscapes

The geological features of BENM provide stunning vistas and opportunities for scientific study.

Objects
<p>Specific objects noted in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, include the following:</p> <ul style="list-style-type: none"> • Bears Ears Buttes • Comb Ridge • North and South Six-Shooter Peaks • North and South Forks of Mule Canyon • Indian Creek Canyon (geologic features and formations present within the Indian Creek Unit of the Monument) • Dark Canyon Wilderness
Values
<p>Opportunities for geologic research, education, protection, and interpretation</p>

Paleontological Resources

The paleontological resources in the BENM area are among the richest and most significant in the United States and provide important opportunities for further study.

Objects
<p>Specific objects noted in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, include the following:</p> <ul style="list-style-type: none"> • Vertebrate and invertebrate fossils within the Arch Canyon and Comb Ridge fossil sites, including pelecypods, gastropods, arthropods, fishes, amphibians, and reptiles in the exposed Chinle Formation • Dinosaur trackways, including, but not limited to, Shay Canyon fossil tracks and Butler Wash dinosaur tracksite • High potential fossil yield sites and sites of important discovery, such as Arch Canyon, Butler Wash, Comb Ridge, Indian Creek, and Shay Canyon
Values
<p>Opportunities for paleontological research, interpretation, and protection Opportunities for paleontological education and outreach Opportunities for the public to visit paleontological resources in situ</p>

Biological and Ecological Resources and Processes

BENM supports a broad diversity of plants, animal communities, and ecosystems.

Objects
<p>Specific objects noted in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, include the following:</p> <ul style="list-style-type: none"> • Bridger Jack Mesa and Lavender Mesa, which are home to relict plant communities, provide the opportunity for comparative studies in other parts of the Colorado Plateau. • Water sources, including springs, seeps, tinajas, and their associated riparian habitat (e.g., hanging gardens) • Perennial and intermittent streams and riparian corridors • Special status plant and wildlife species habitats
Values
<p>Continued opportunities for research and education, including via the Canyonlands Research Center</p> <p>Opportunities to protect headwaters and water supplies</p> <p>Diversity of wildlife species and associated habitats</p> <p>Diversity of native vegetation and habitats (including Elk Ridge, mesa tops, and canyons)</p> <p>Opportunities for ecological restoration and active vegetation management</p> <p>Opportunities to collect firewood</p> <p>Opportunities to collect plant materials and seeds</p> <p>Livestock grazing and associated management activities and structures as a tool to restore or maintain the health of watersheds and grasslands</p>

Recreational Opportunities

BENM contains recreational resources that also support economic opportunities within local communities.

Values
<p>Managing lands for world-class outdoor recreational opportunities and to support a growing travel and tourism sector</p> <p>Opportunities for cultural and heritage tourism</p> <p>Opportunities for experiencing dark skies and natural quiet</p> <p>Opportunities for education and interpretation</p>

Economic Opportunities

BENM contains resources that also support economic opportunities within local communities.

Value
Livestock grazing

APPENDIX B

Maps



MAPS

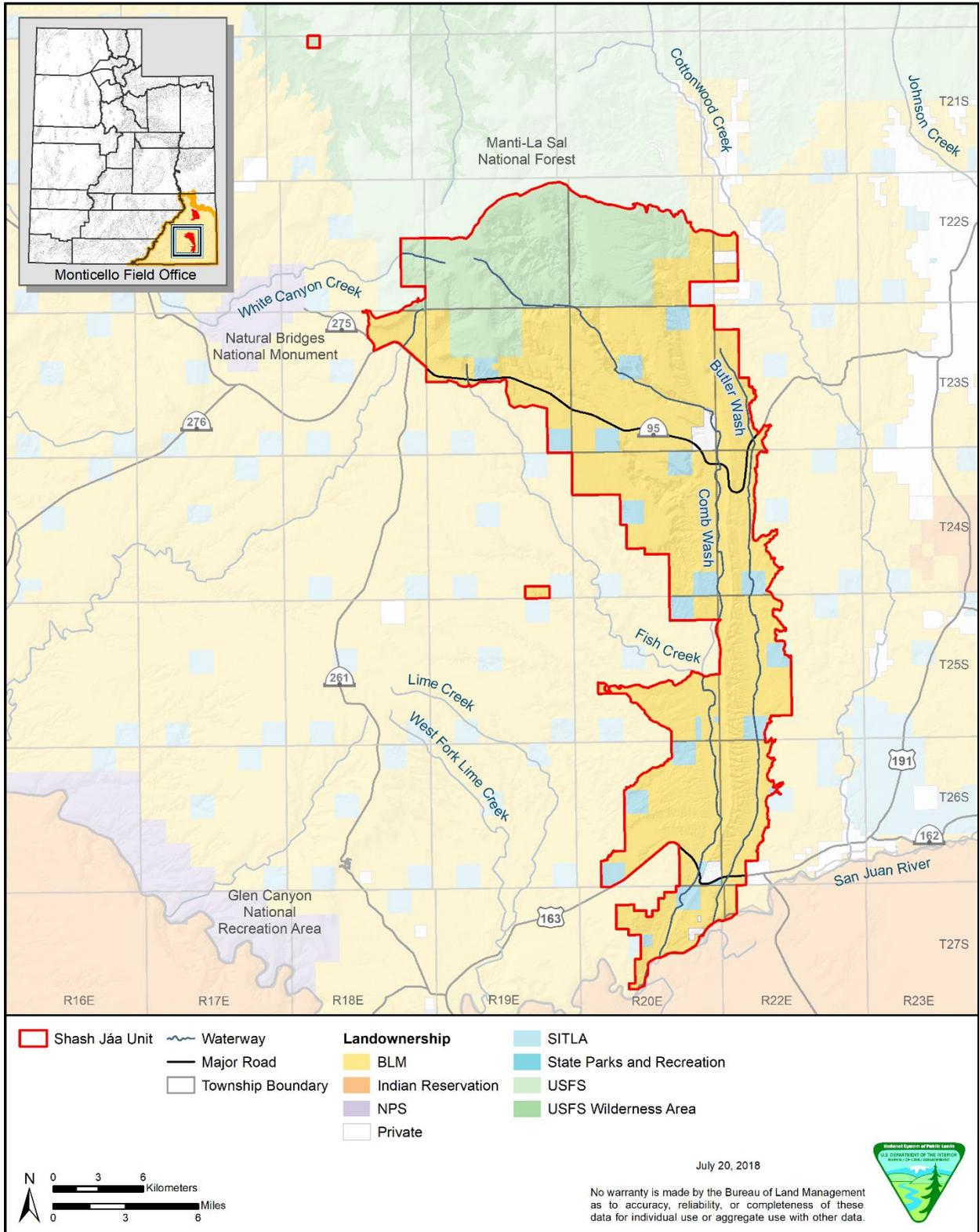
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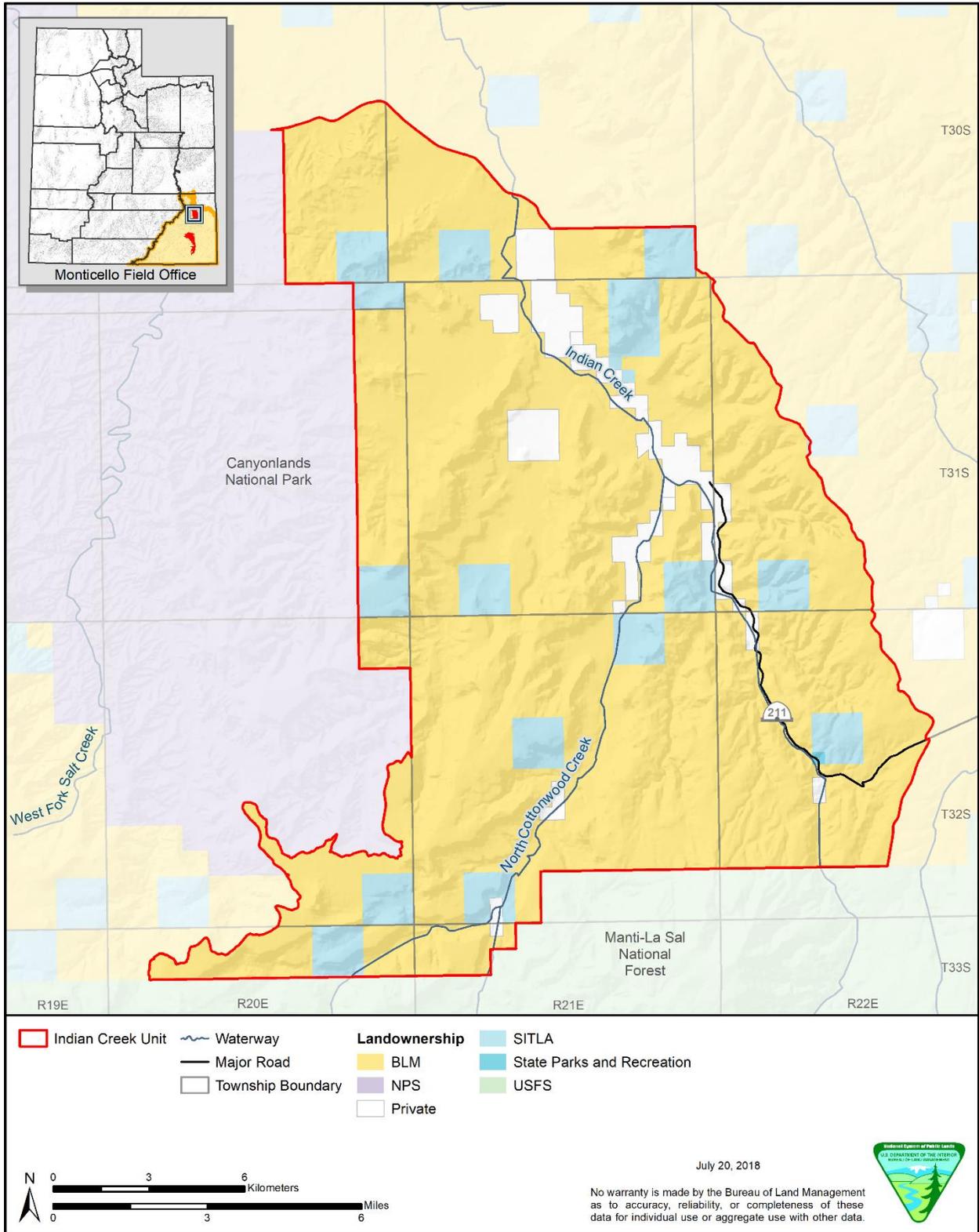
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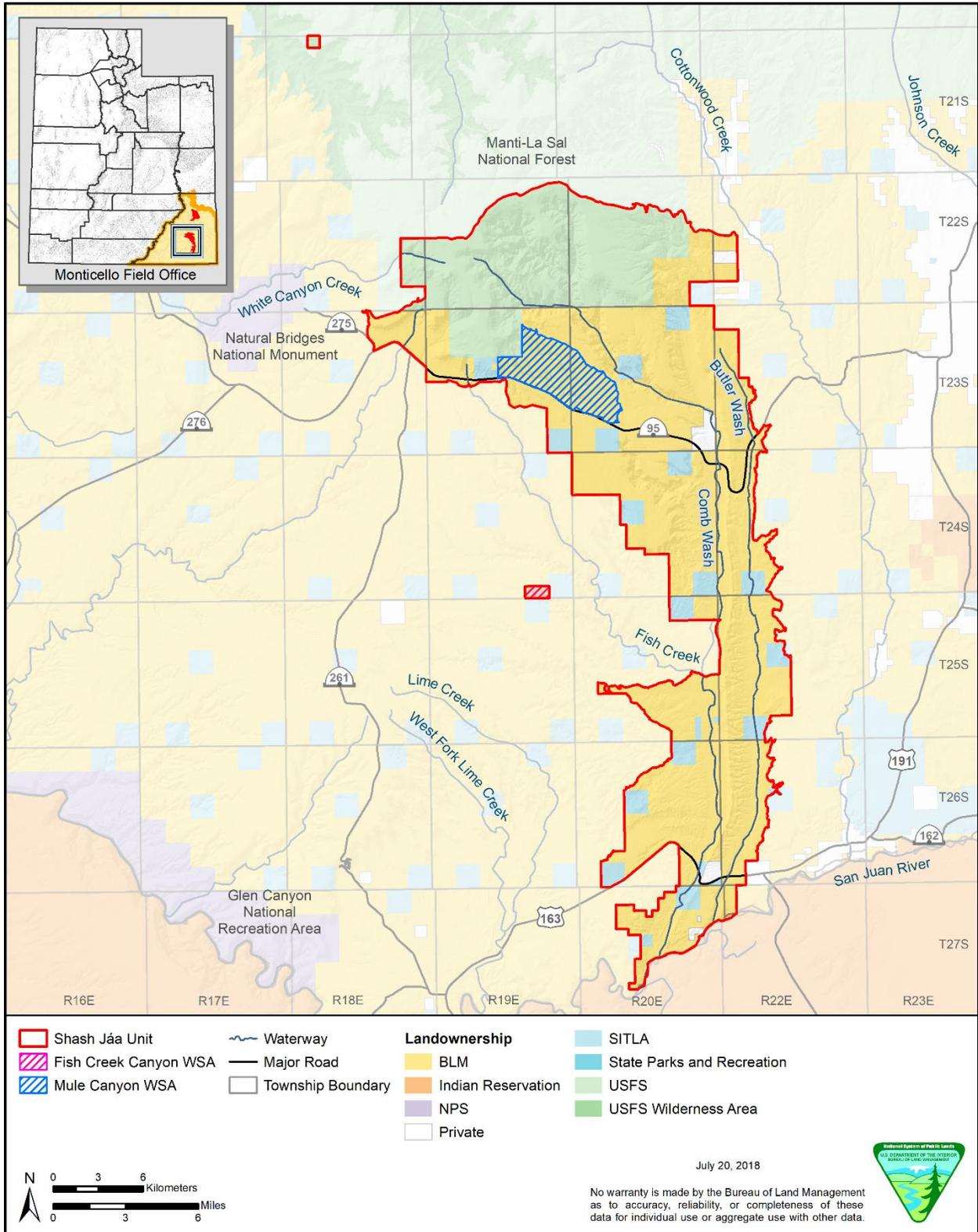
Map 1-1. Bears Ears National Monument - Shash Jáa Unit



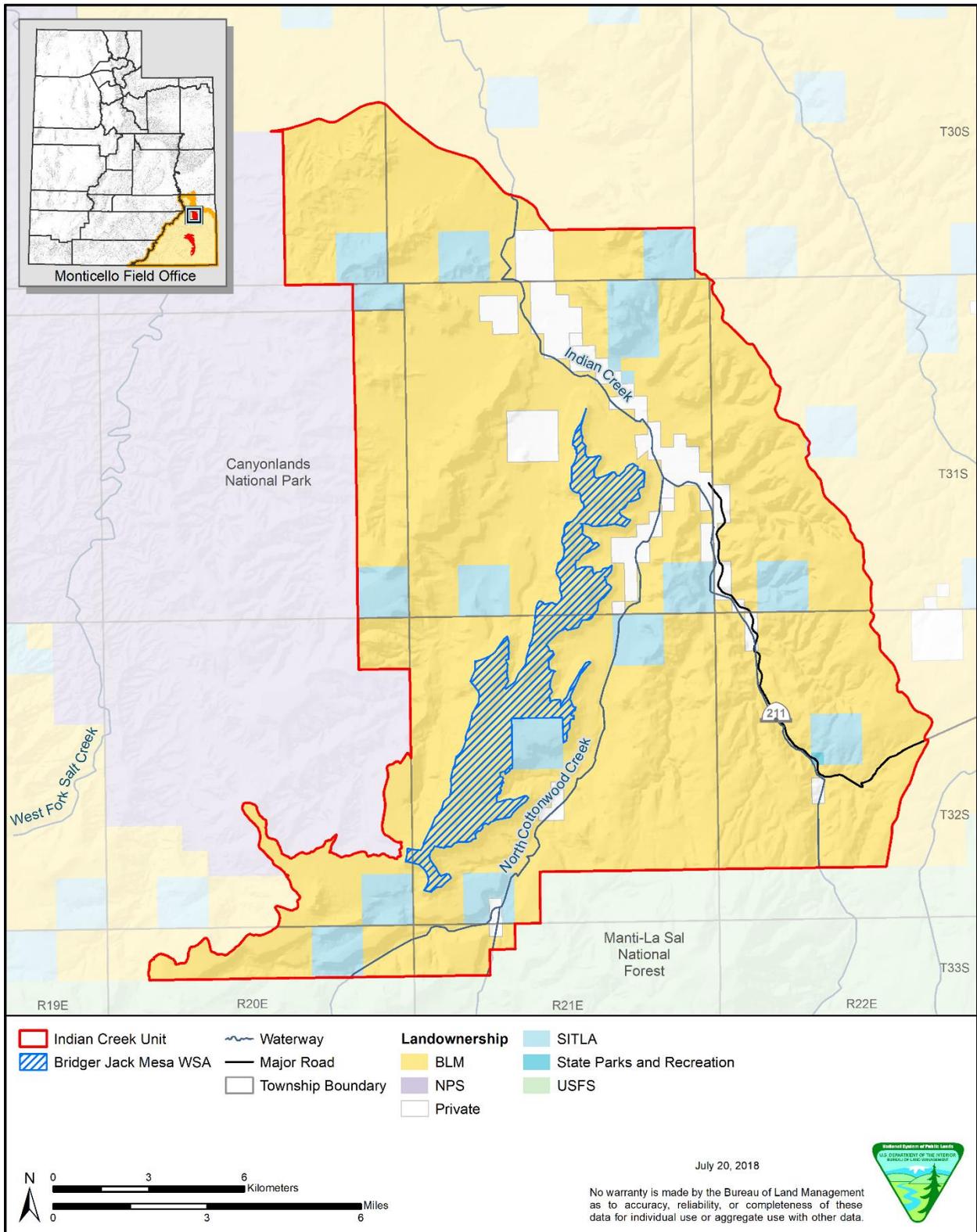
Map 1-2. Bears Ears National Monument - Indian Creek Unit



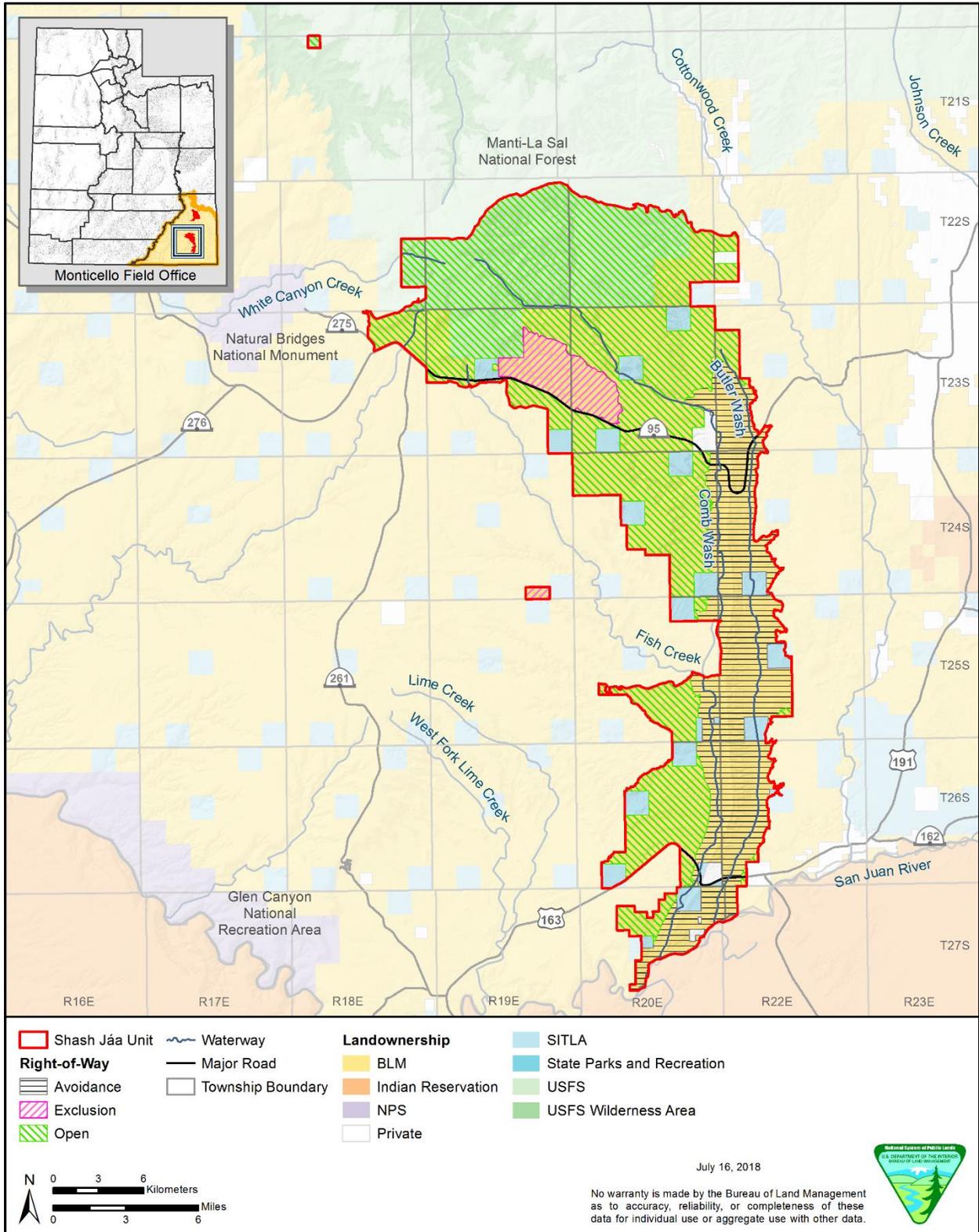
Map 1-3. Shash Jaa Unit: Existing Wilderness Study Areas



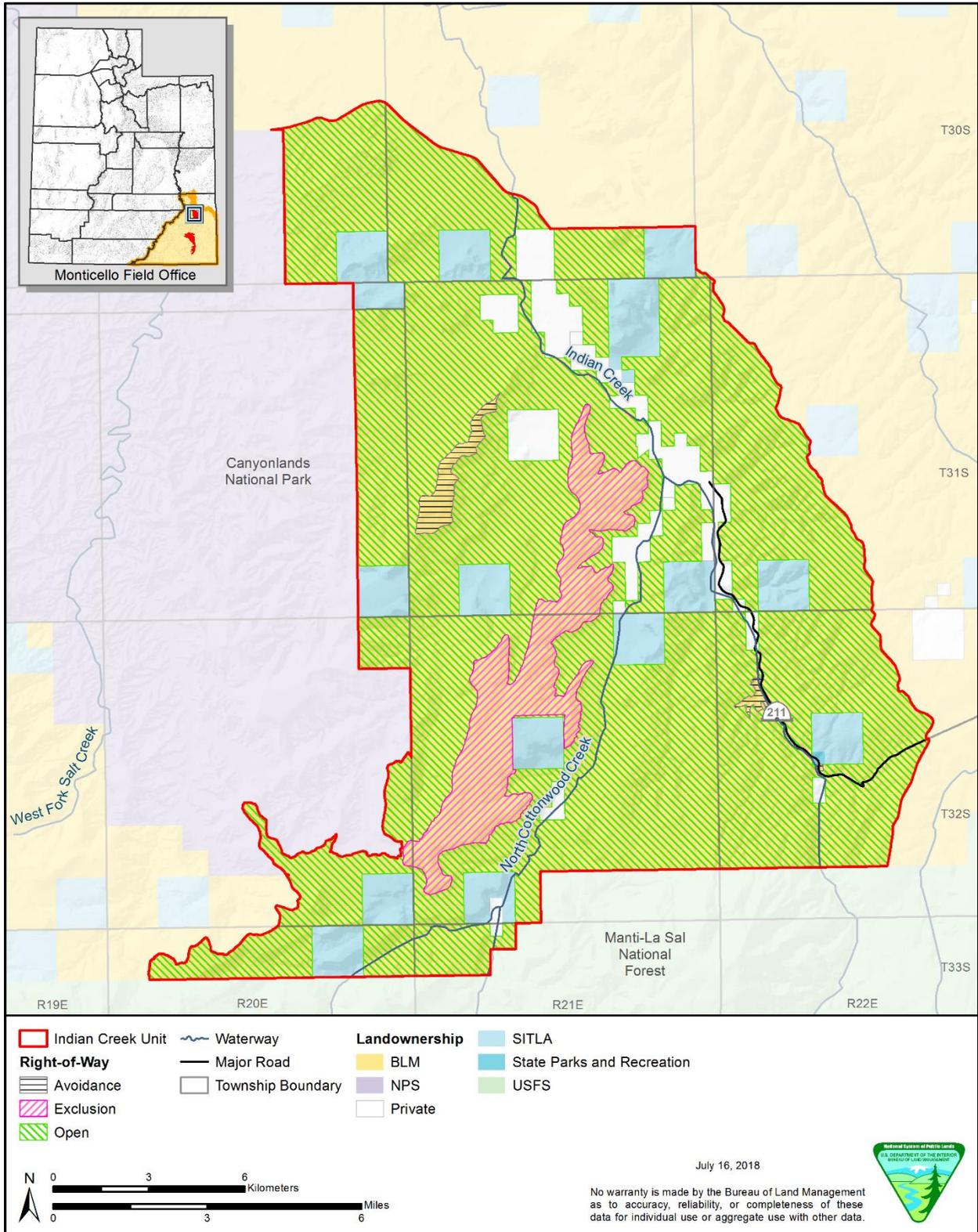
Map 1-4. Indian Creek Unit: Existing Wilderness Study Areas



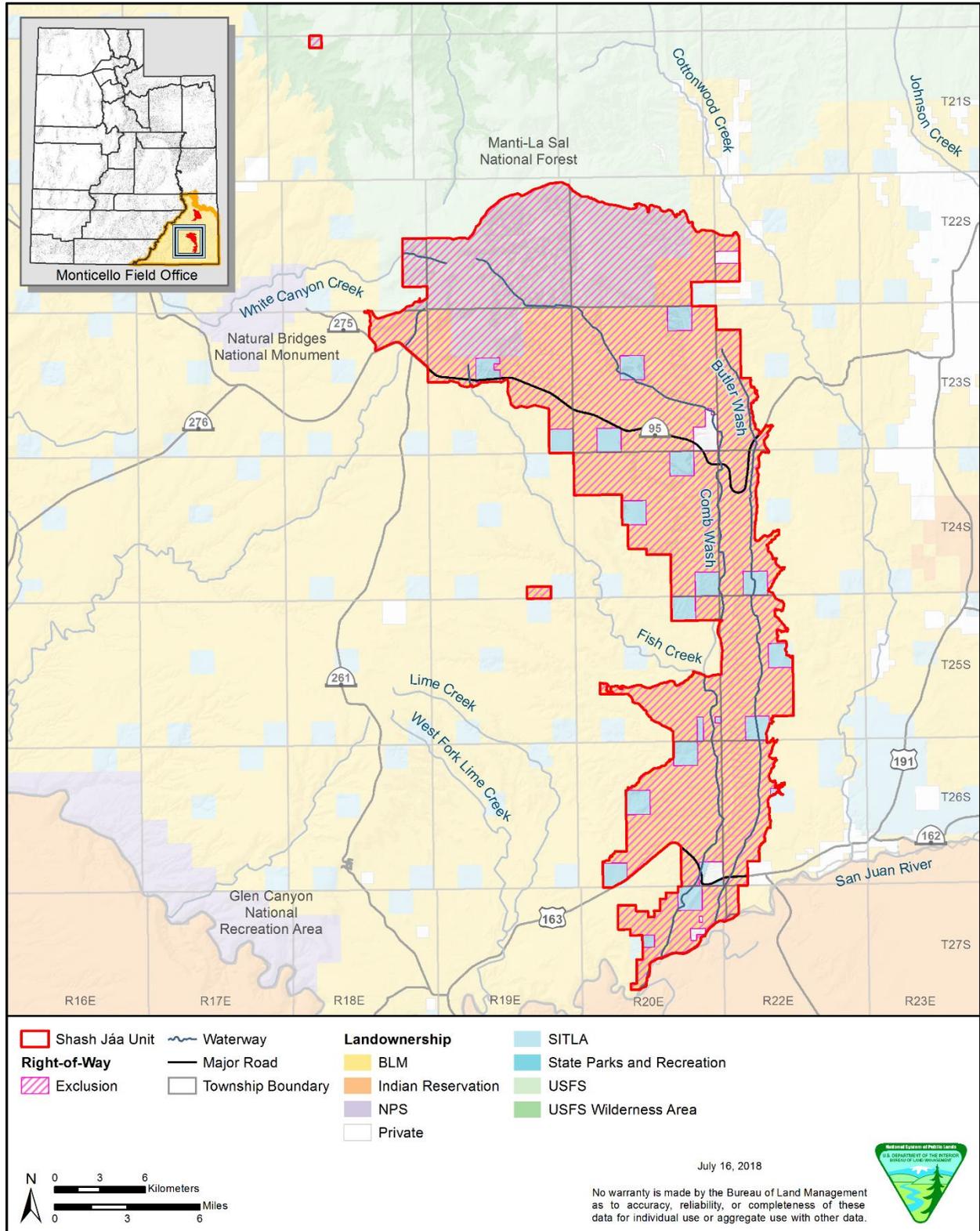
Map 2-1. Shash Jaa Unit: Right-of-Way Avoidance and Exclusion Areas - Alternative A



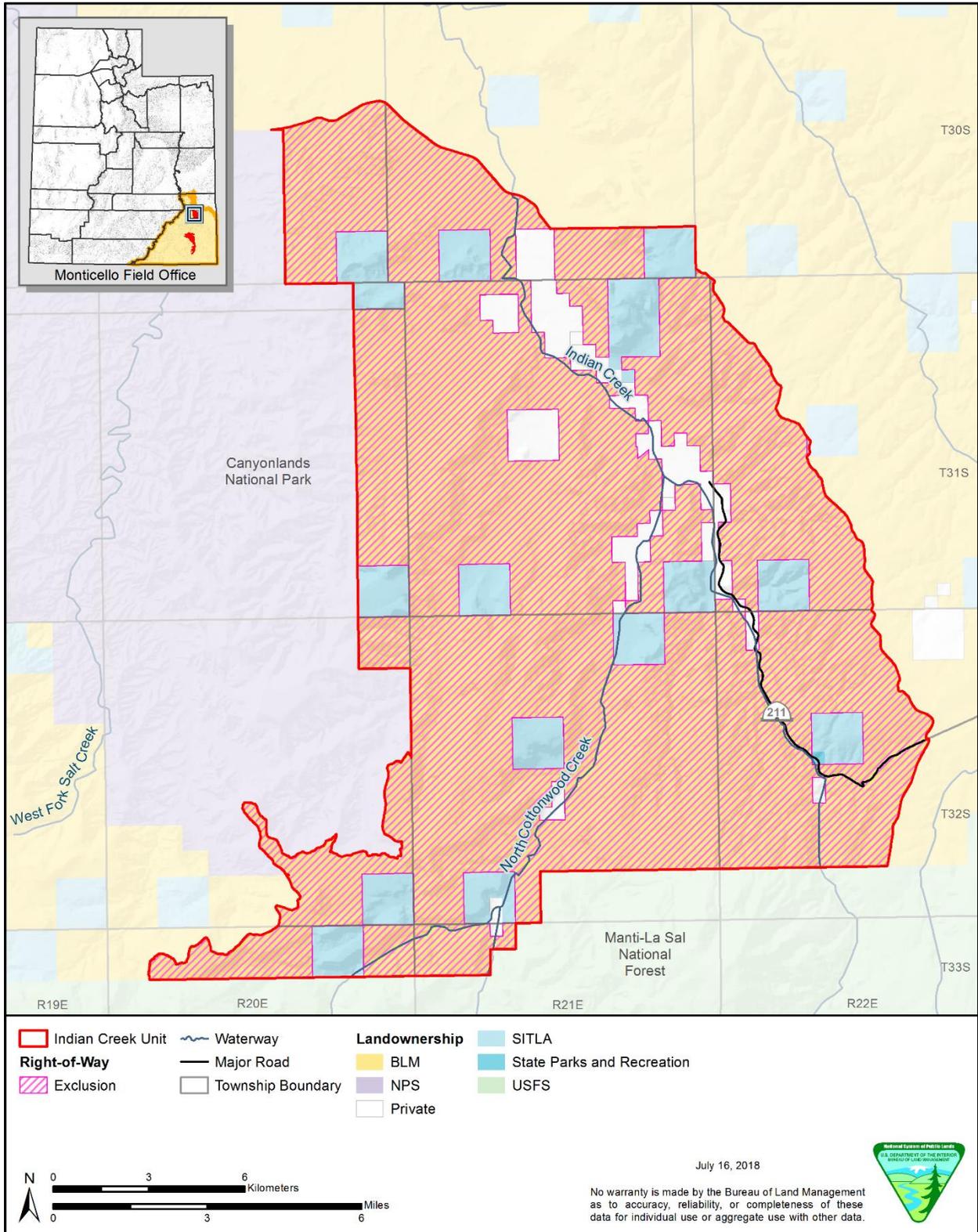
Map 2-2. Indian Creek Unit: Right-of-Way Avoidance and Exclusion Areas - Alternative A



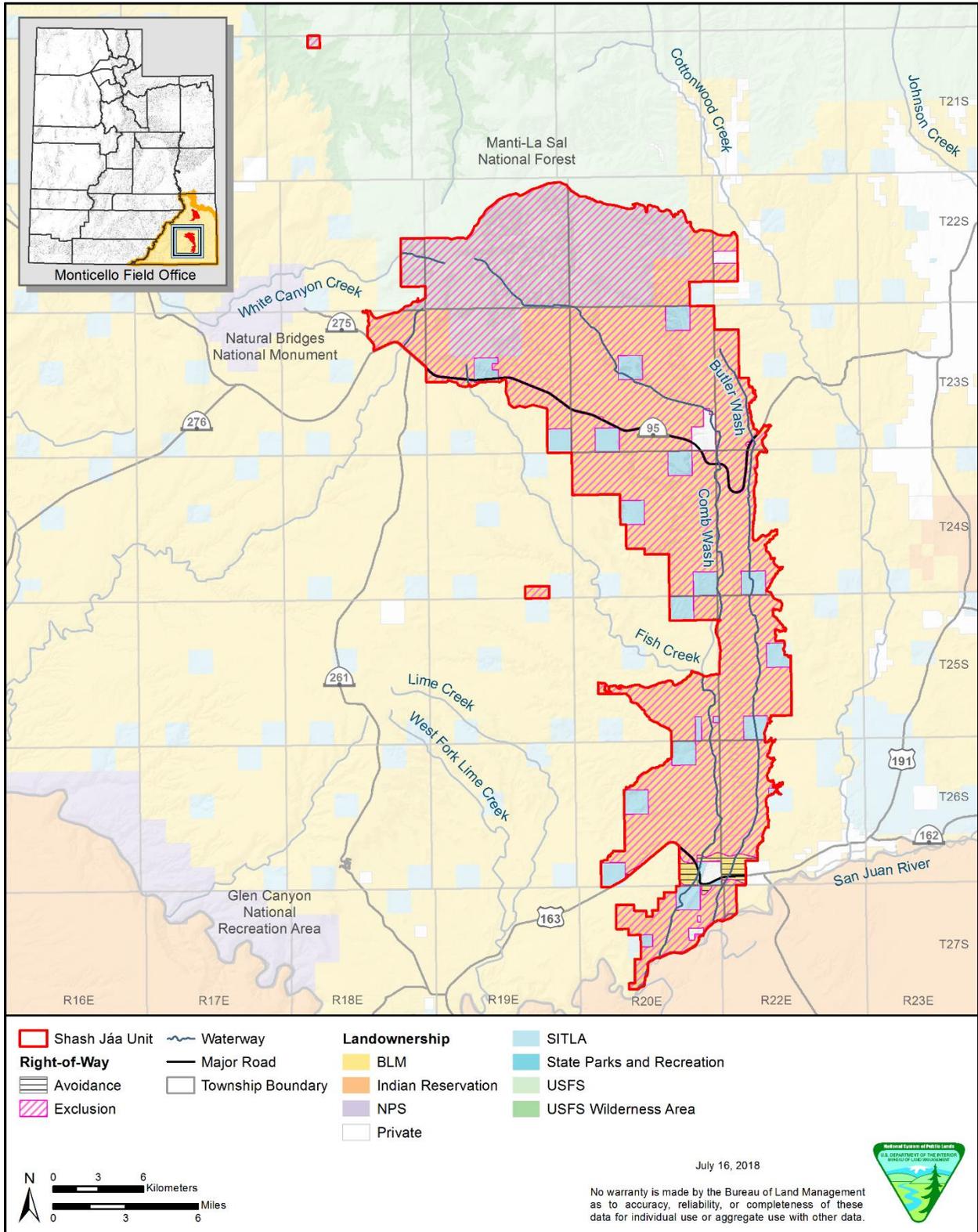
Map 2-3. Shash Jáa Unit: Right-of-Way Avoidance and Exclusion Areas - Alternative B



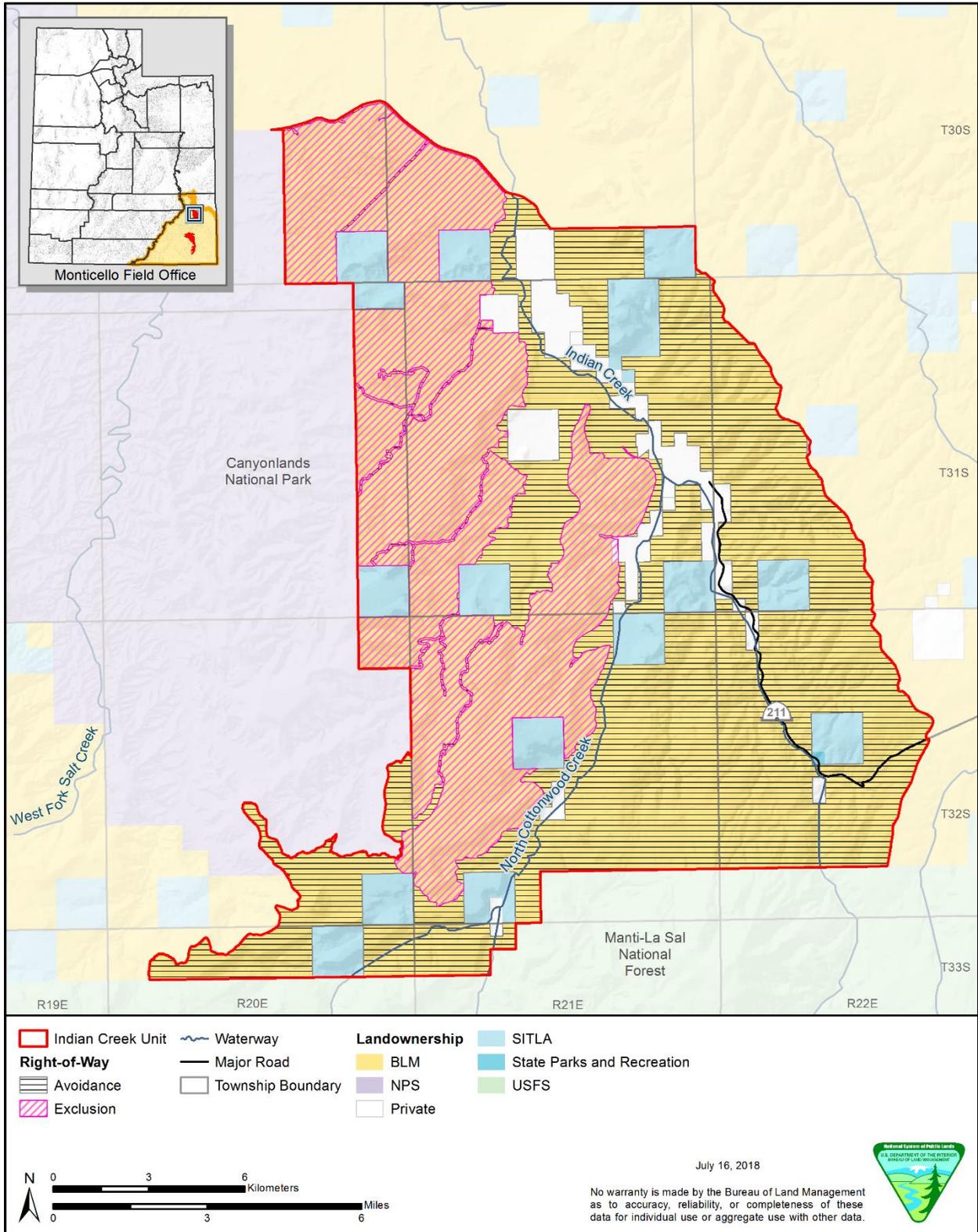
Map 2-4. Indian Creek Unit: Right-of-Way Avoidance and Exclusion Areas - Alternative B



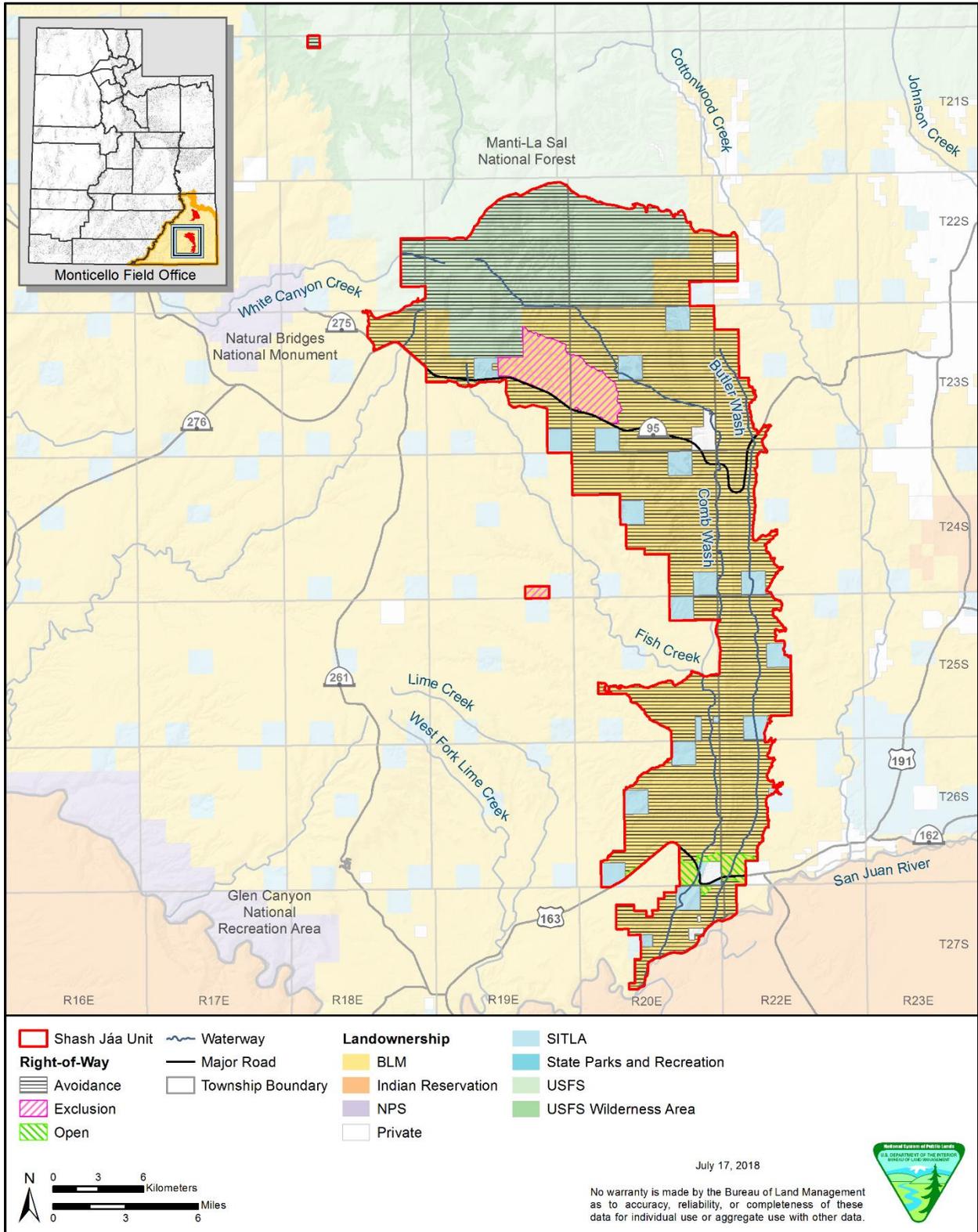
Map 2-5. Shash Jaa Unit: Right-of-Way Avoidance and Exclusion Areas - Alternative C



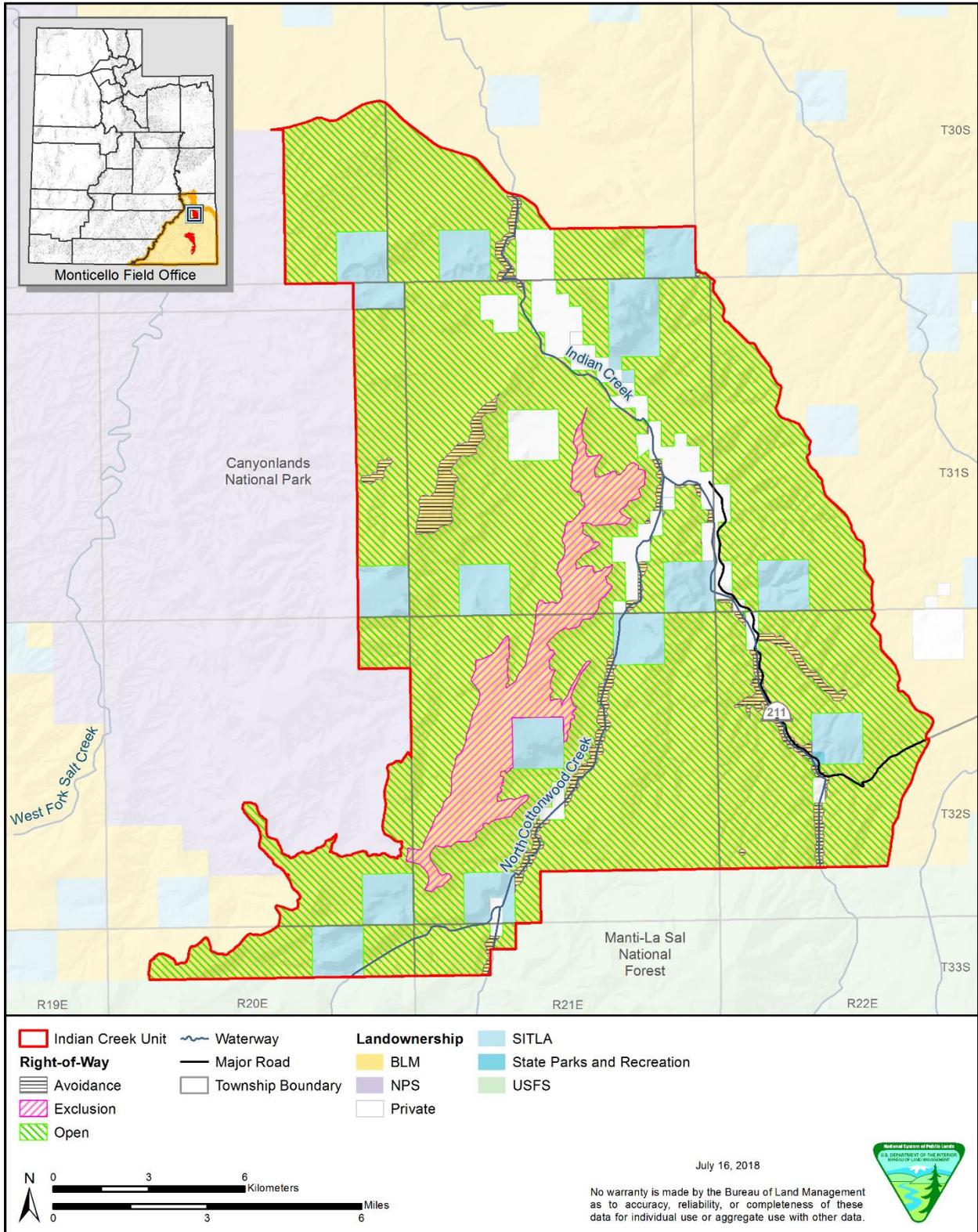
Map 2-6. Indian Creek Unit: Right-of-Way Avoidance and Exclusion Areas - Alternative C



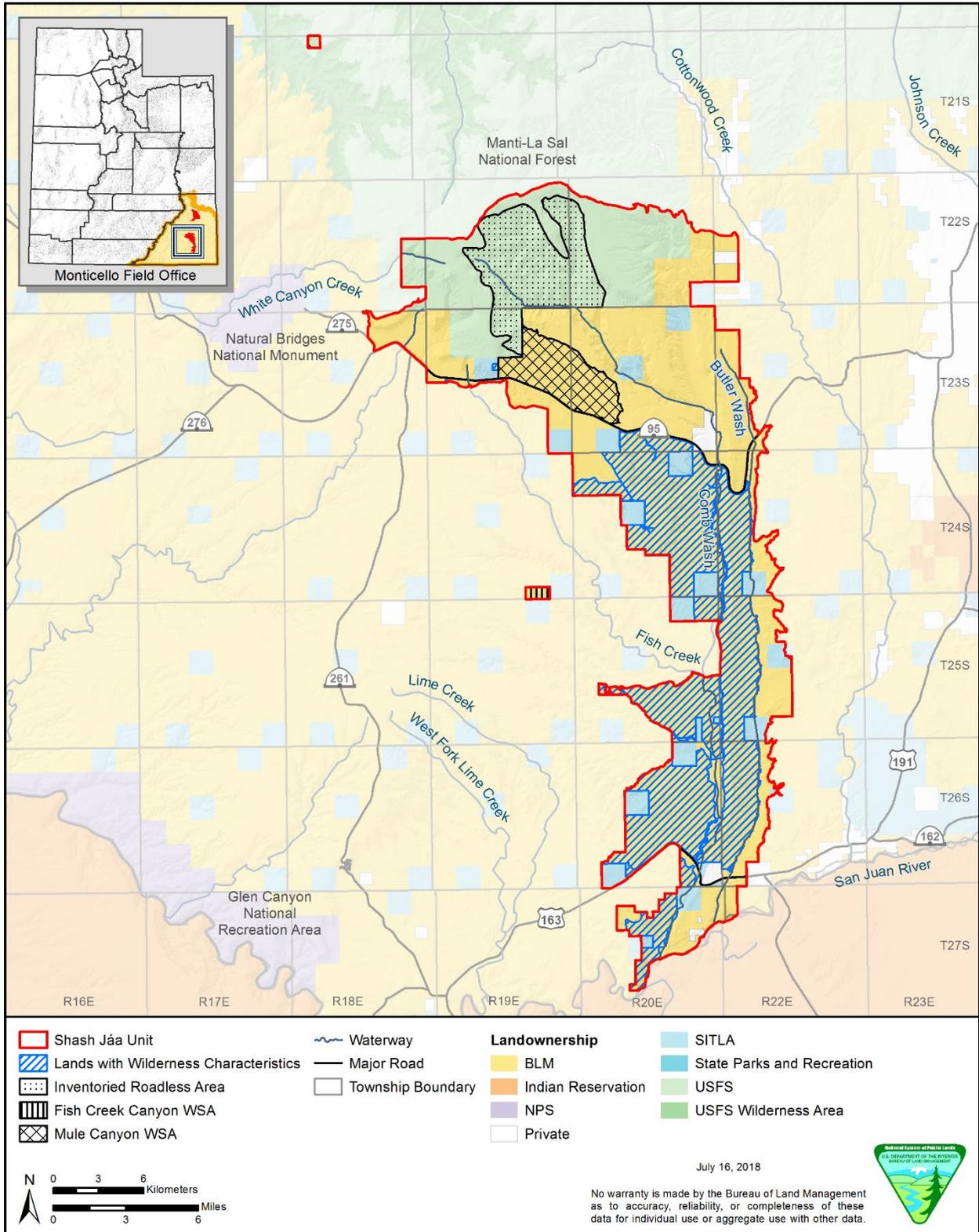
Map 2-7. Shash Jaa Unit: Right-of-Way Avoidance and Exclusion Areas - Alternative D



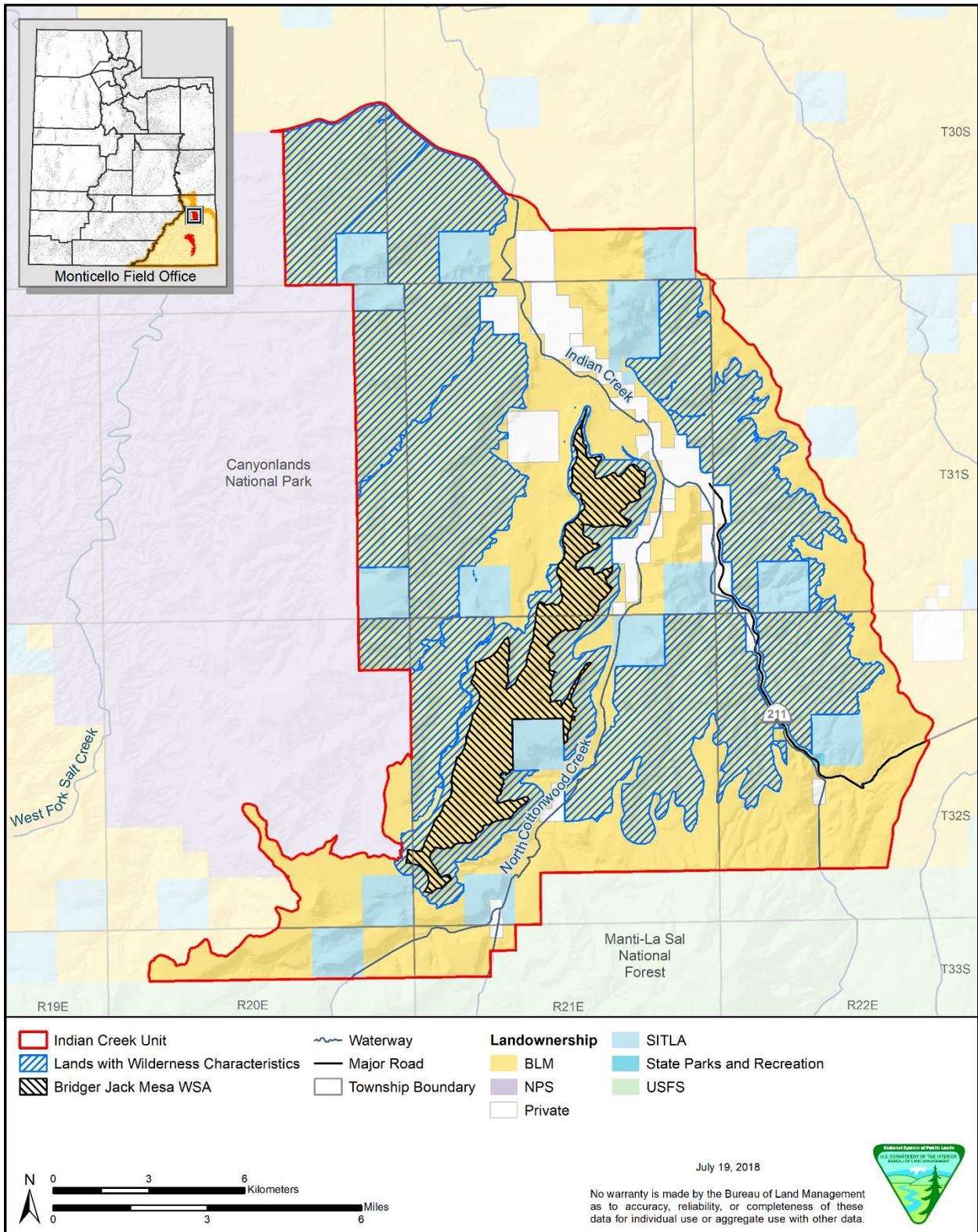
Map 2-8. Indian Creek Unit: Right-of-Way Avoidance and Exclusion Areas - Alternative D



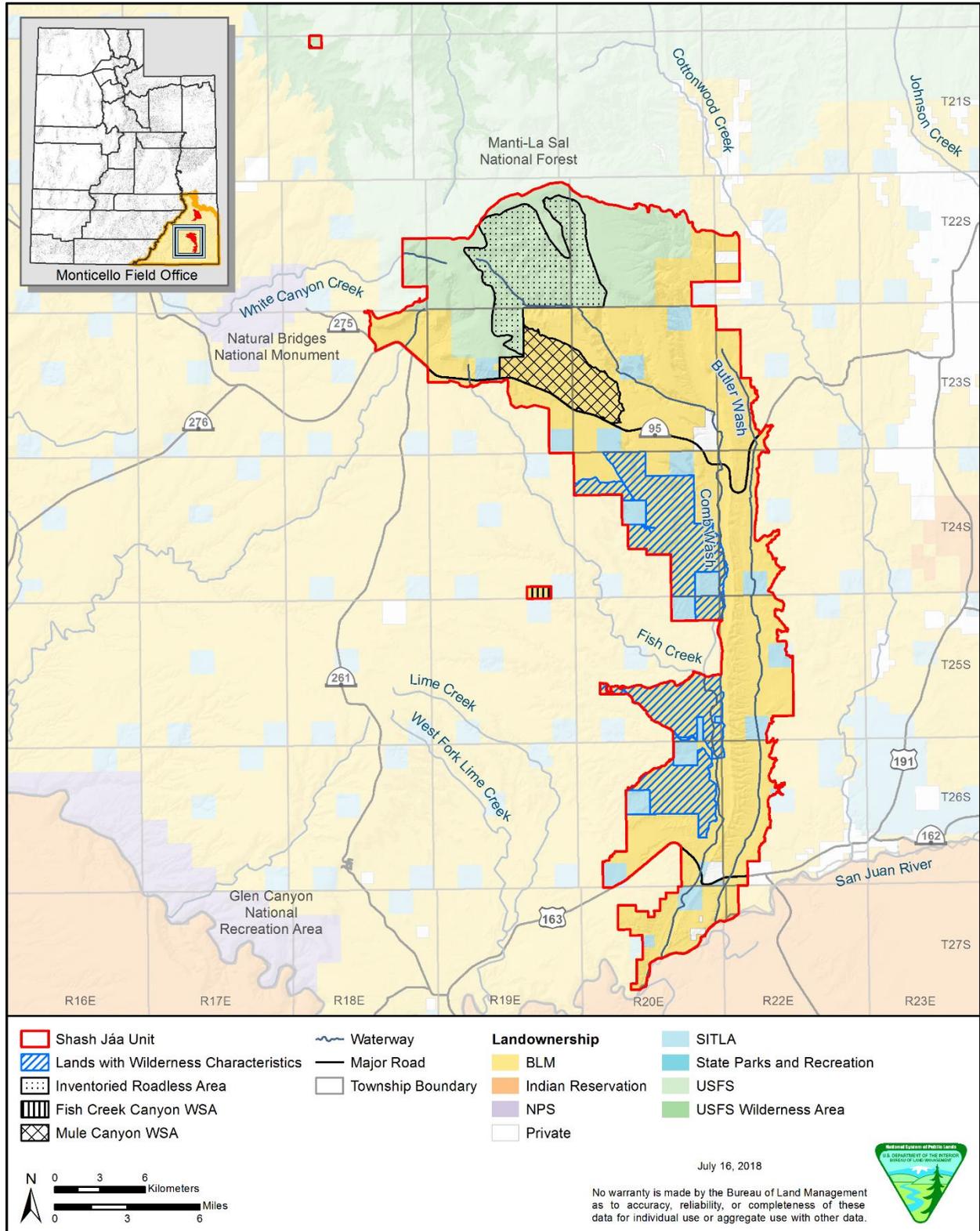
Map 2-9. Shash Jaa Unit: Lands Managed to Protect their Wilderness Characteristics - Alternative B



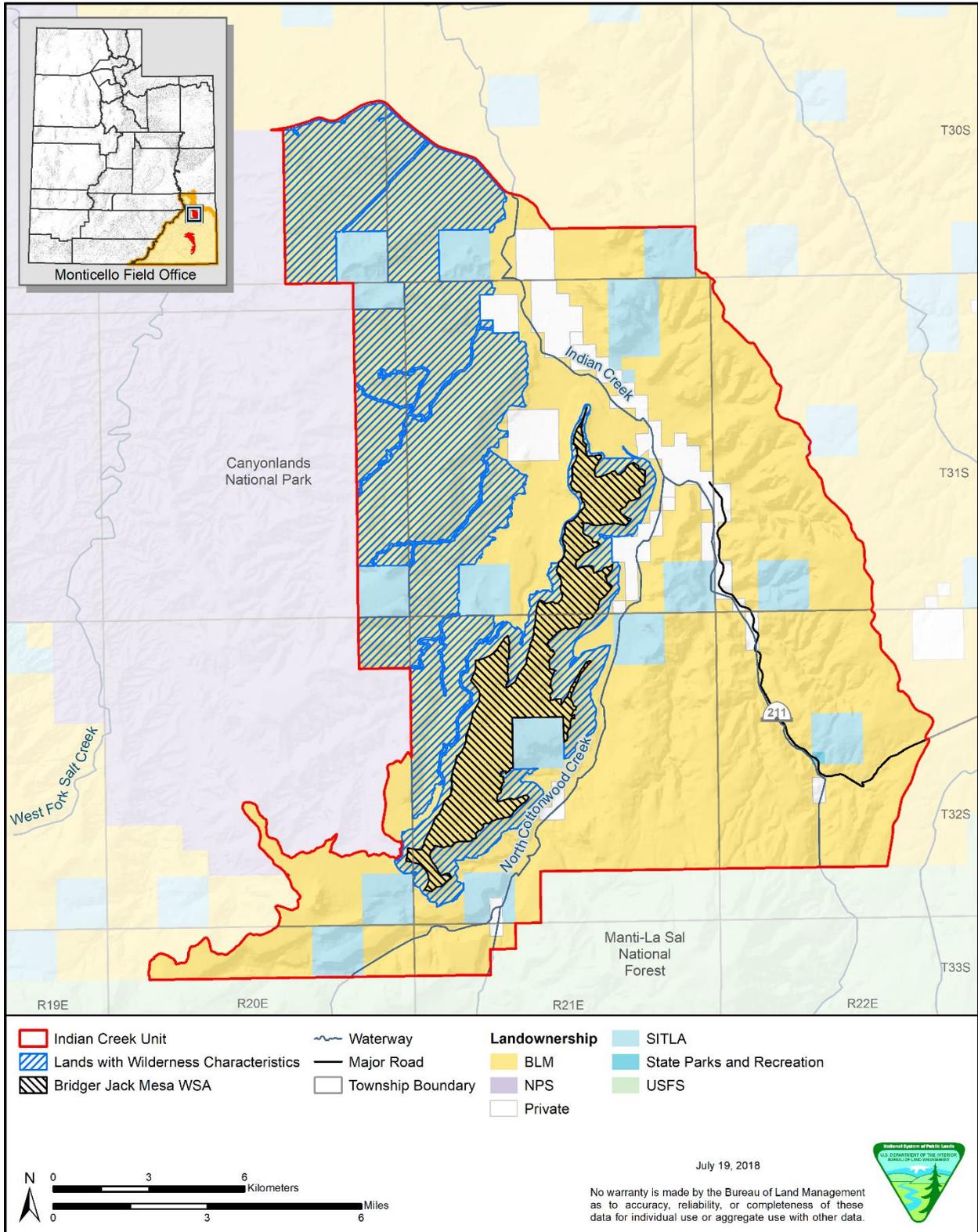
Map 2-10. Indian Creek Unit: Lands Managed to Protect their Wilderness Characteristics - Alternative B



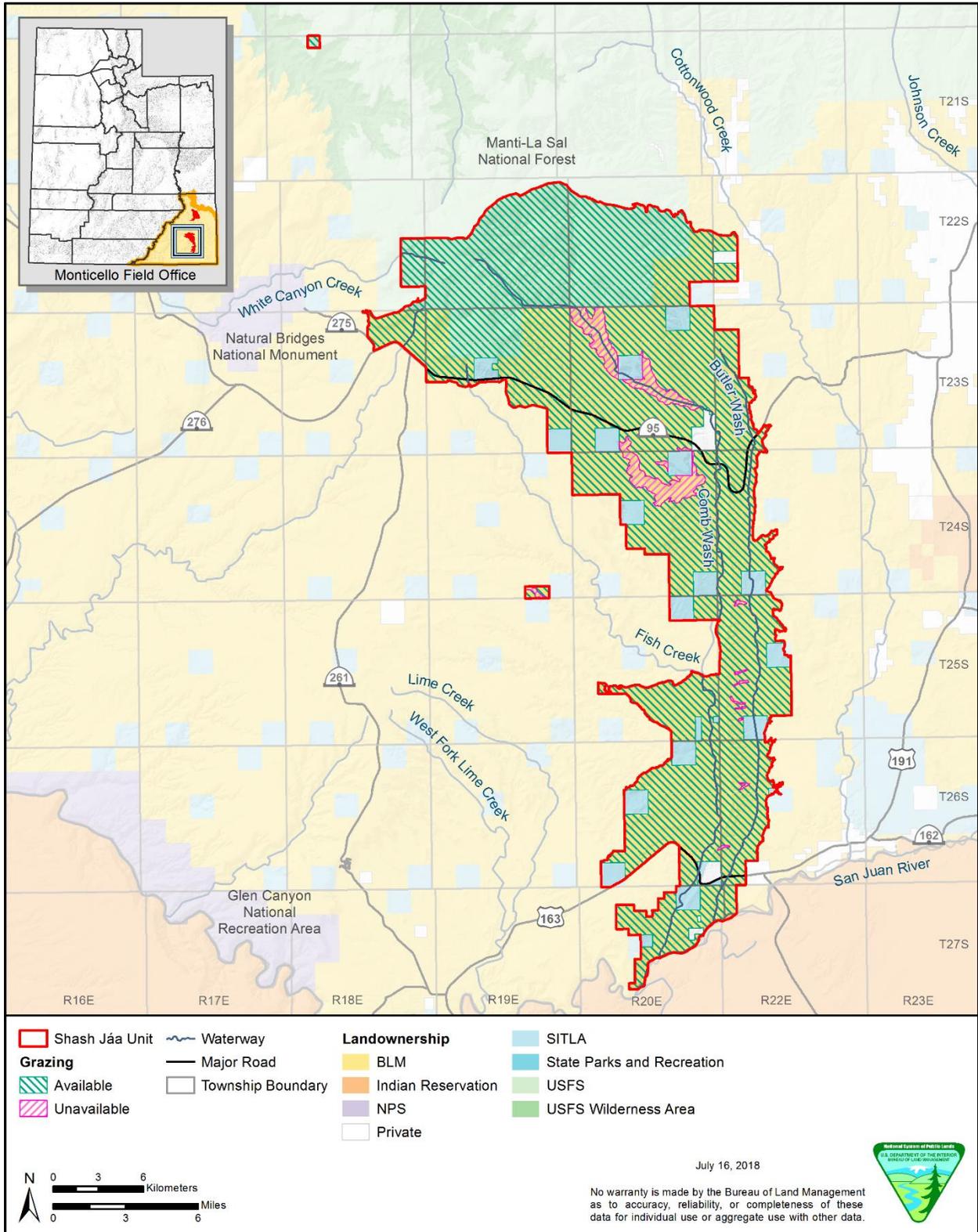
Map 2-11. Shash Jáa Unit: Lands Managed to Protect their Wilderness Characteristics - Alternative C



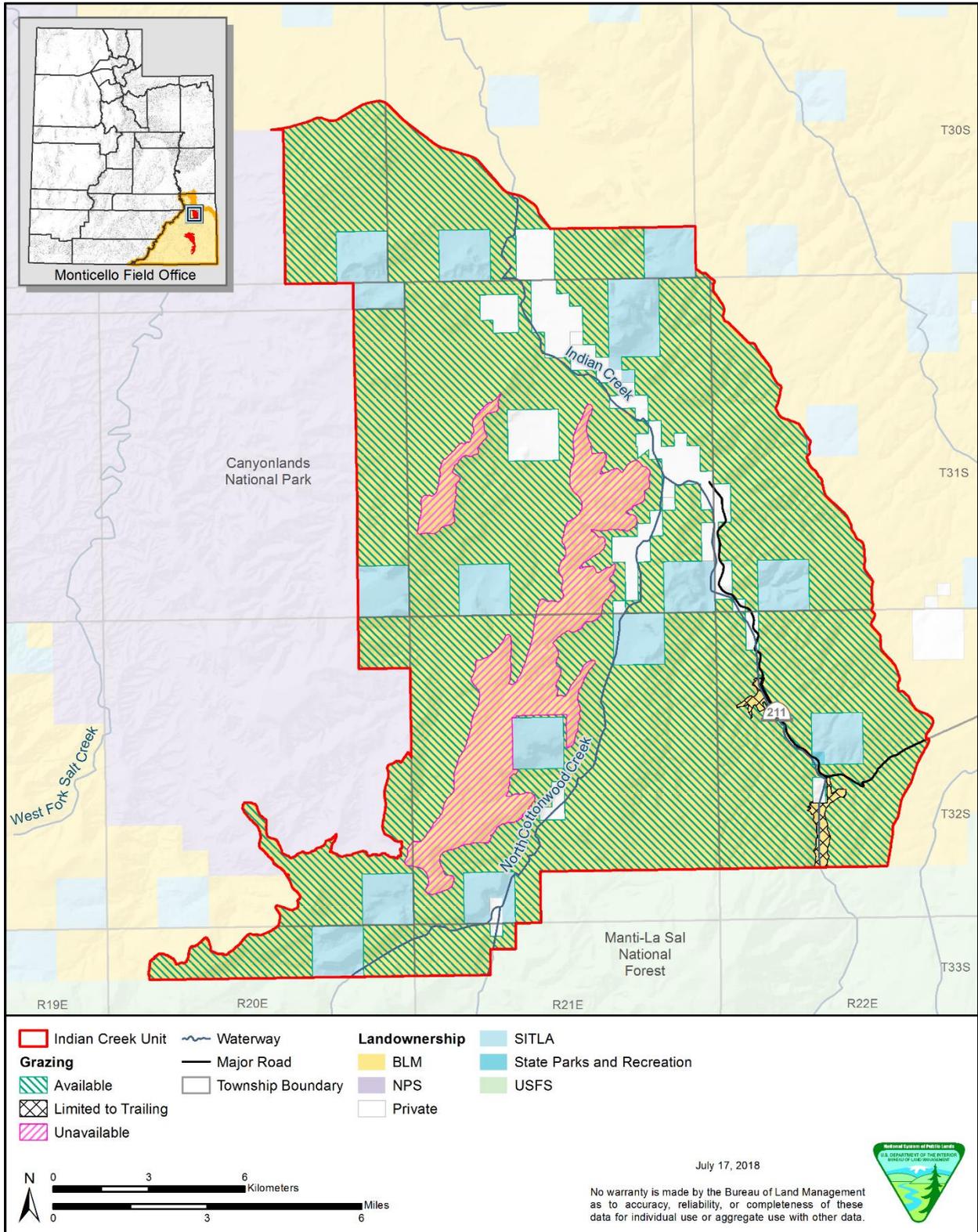
Map 2-12. Indian Creek Unit: Lands Managed to Protect their Wilderness Characteristics - Alternative C



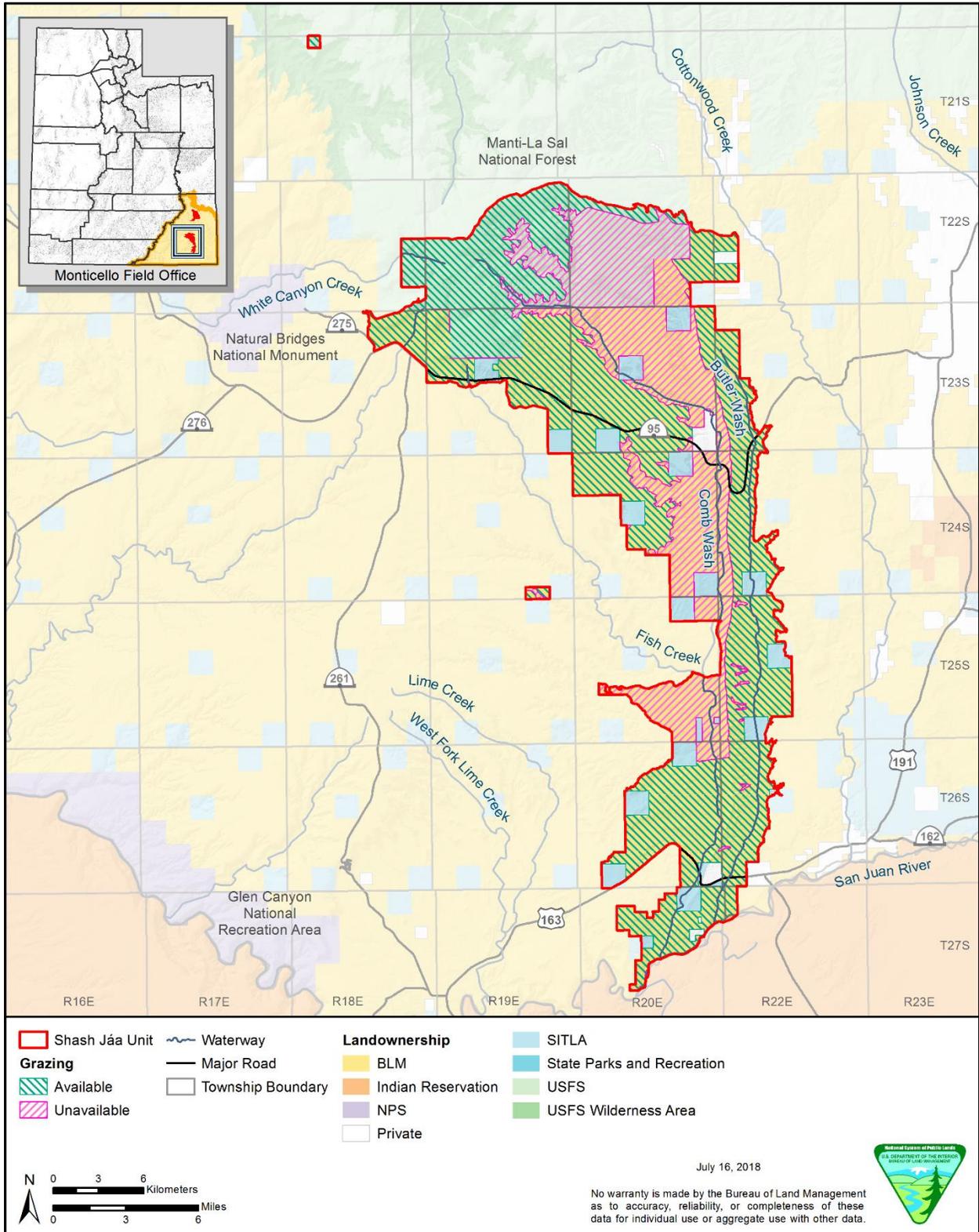
Map 2-13. Shash Jáa Unit: Areas Unavailable for Grazing - Alternative A



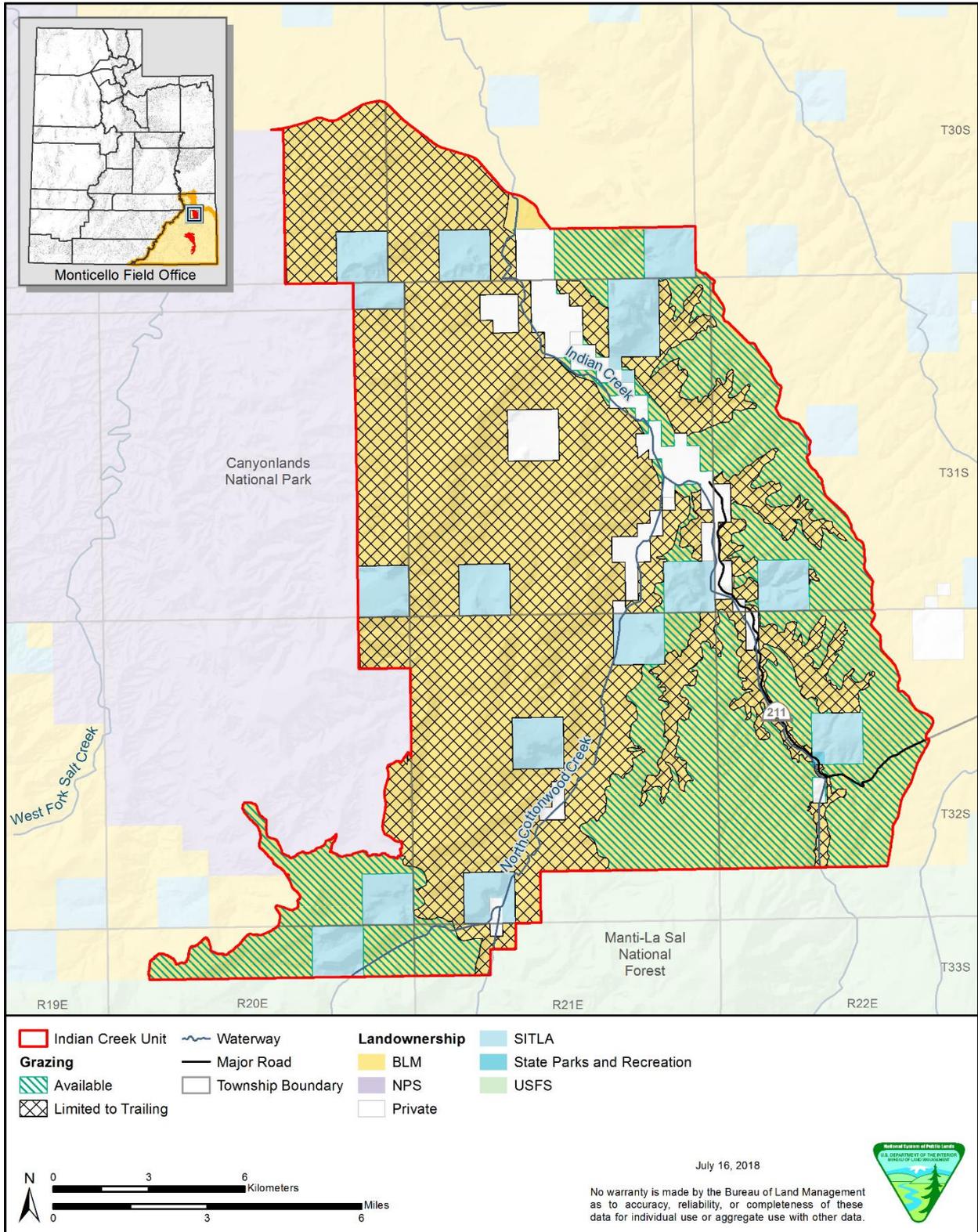
Map 2-14. Indian Creek Unit: Areas Unavailable for Grazing - Alternative A



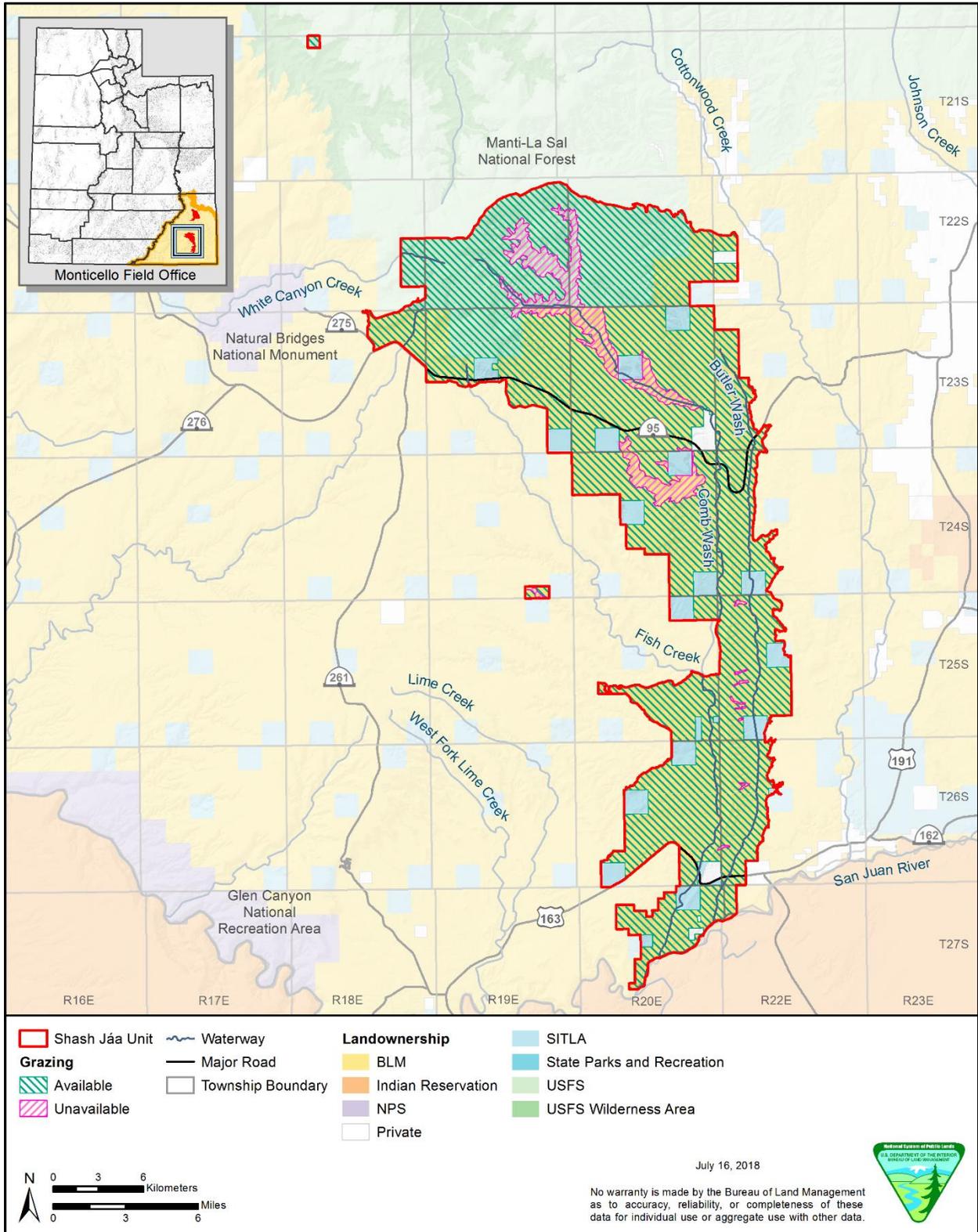
Map 2-15. Shash Jáa Unit: Areas Unavailable for Grazing - Alternative B



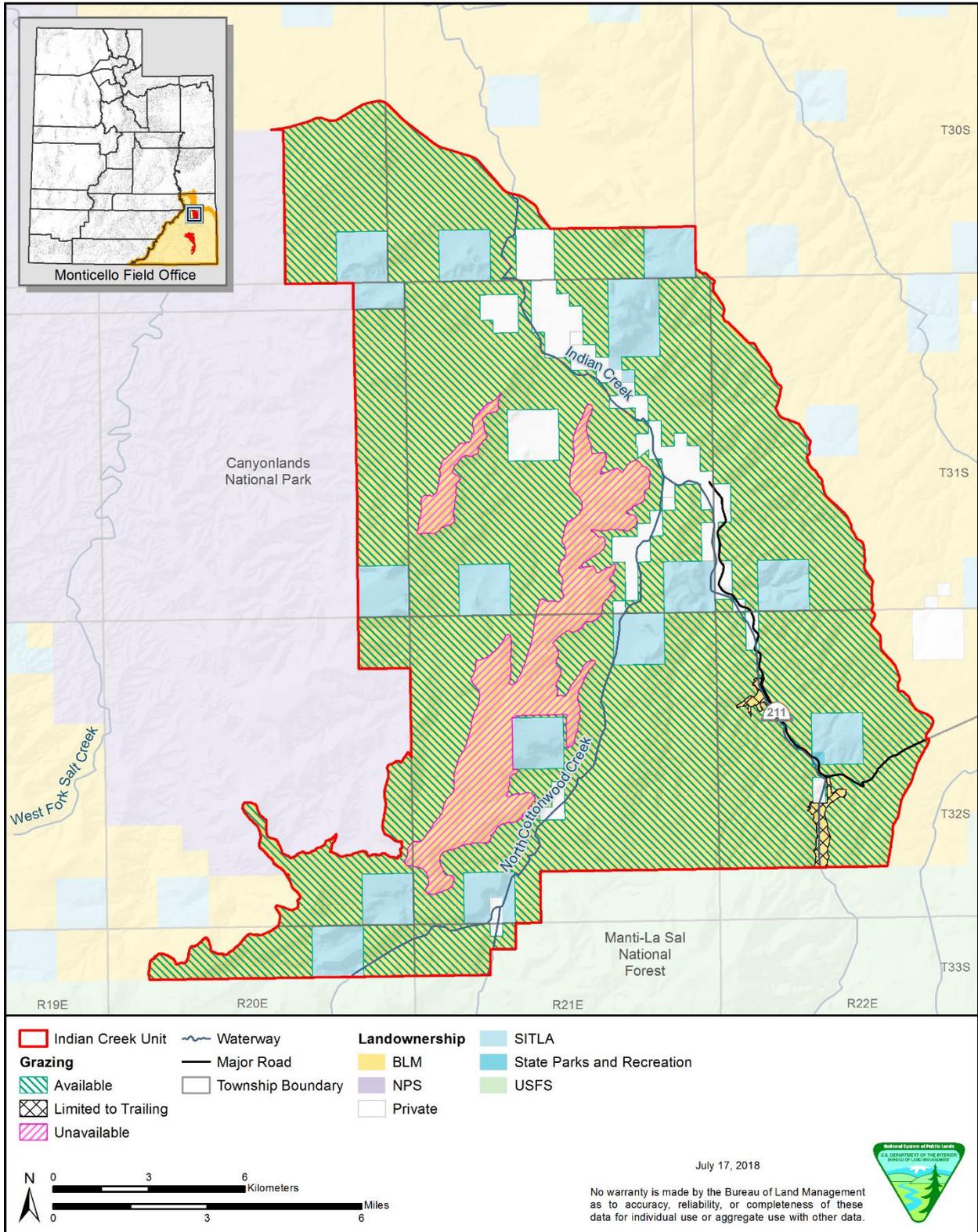
Map 2-16. Indian Creek Unit: Areas Unavailable for Grazing - Alternative B



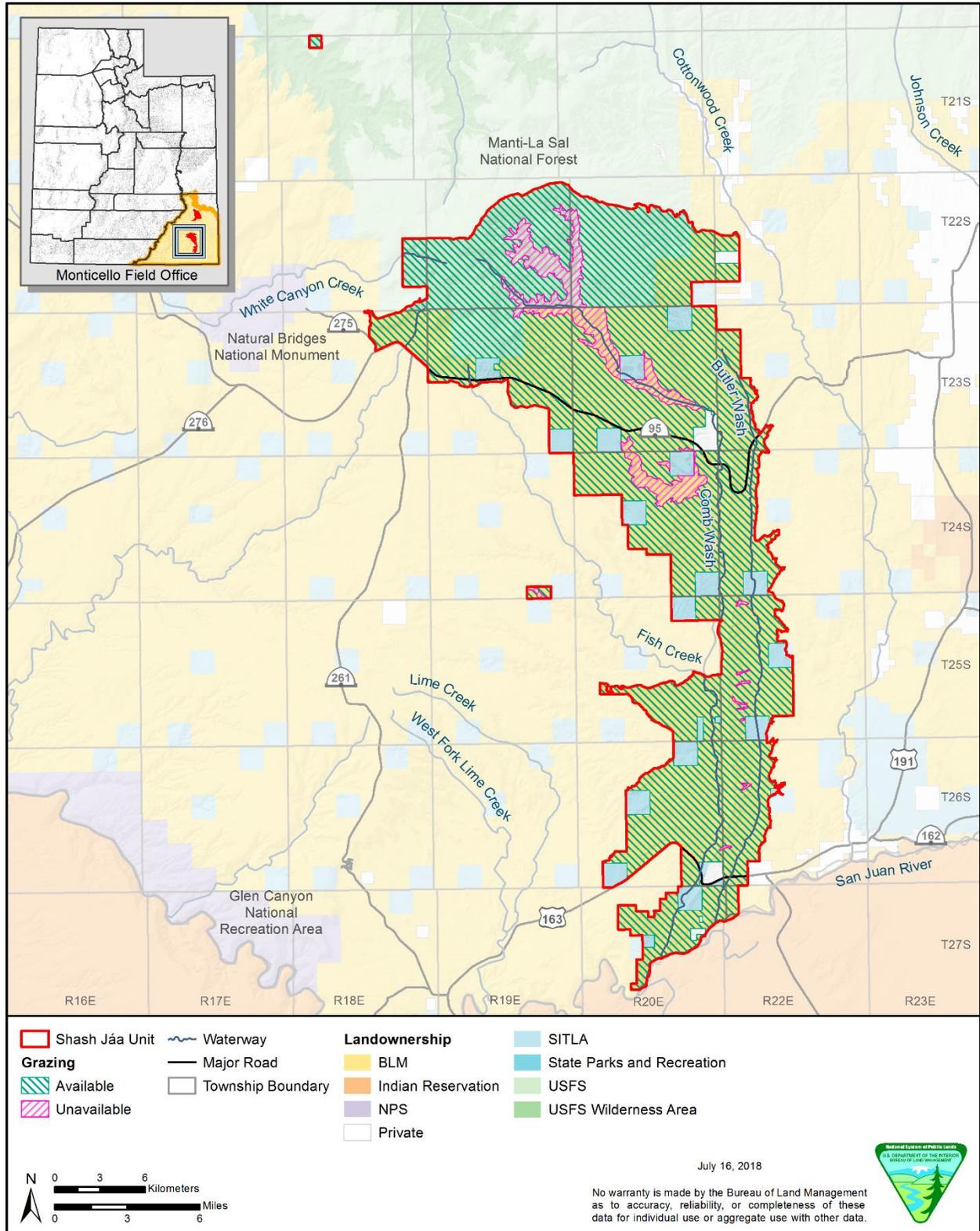
Map 2-17. Shash Jáa Unit: Areas Unavailable for Grazing - Alternative C



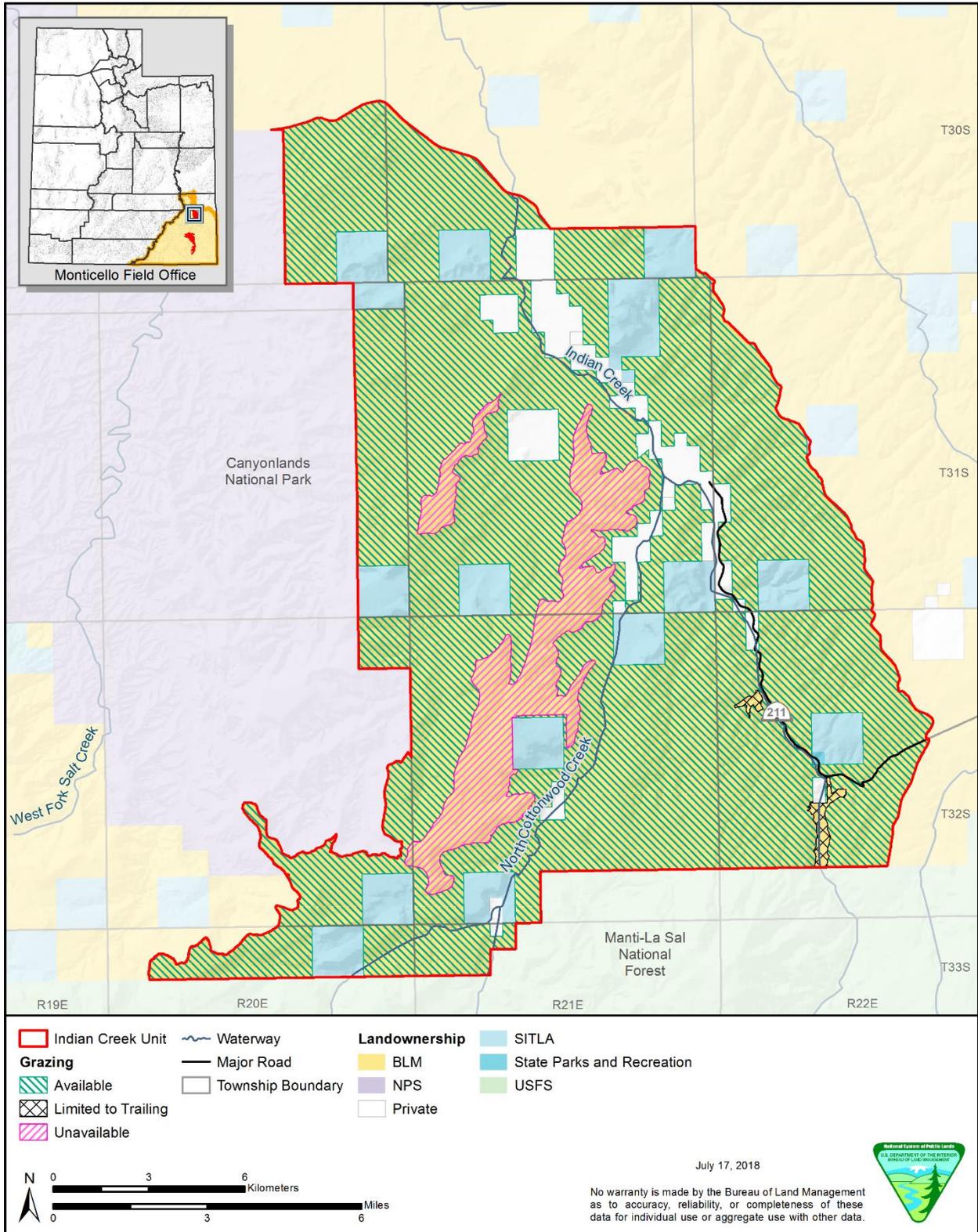
Map 2-18. Indian Creek Unit: Areas Unavailable for Grazing - Alternative C



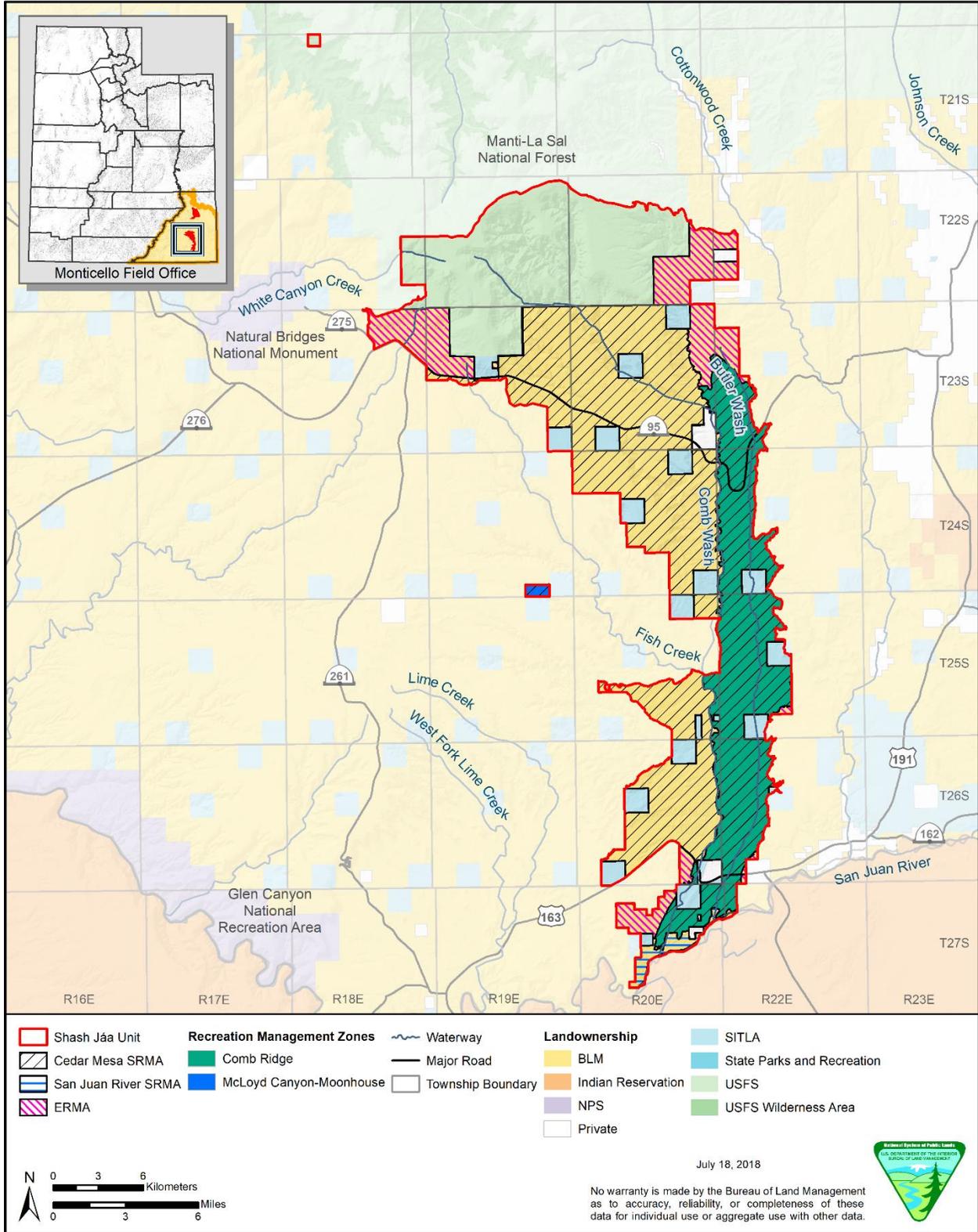
Map 2-19. Shash Jáa Unit: Areas Unavailable for Grazing - Alternative D



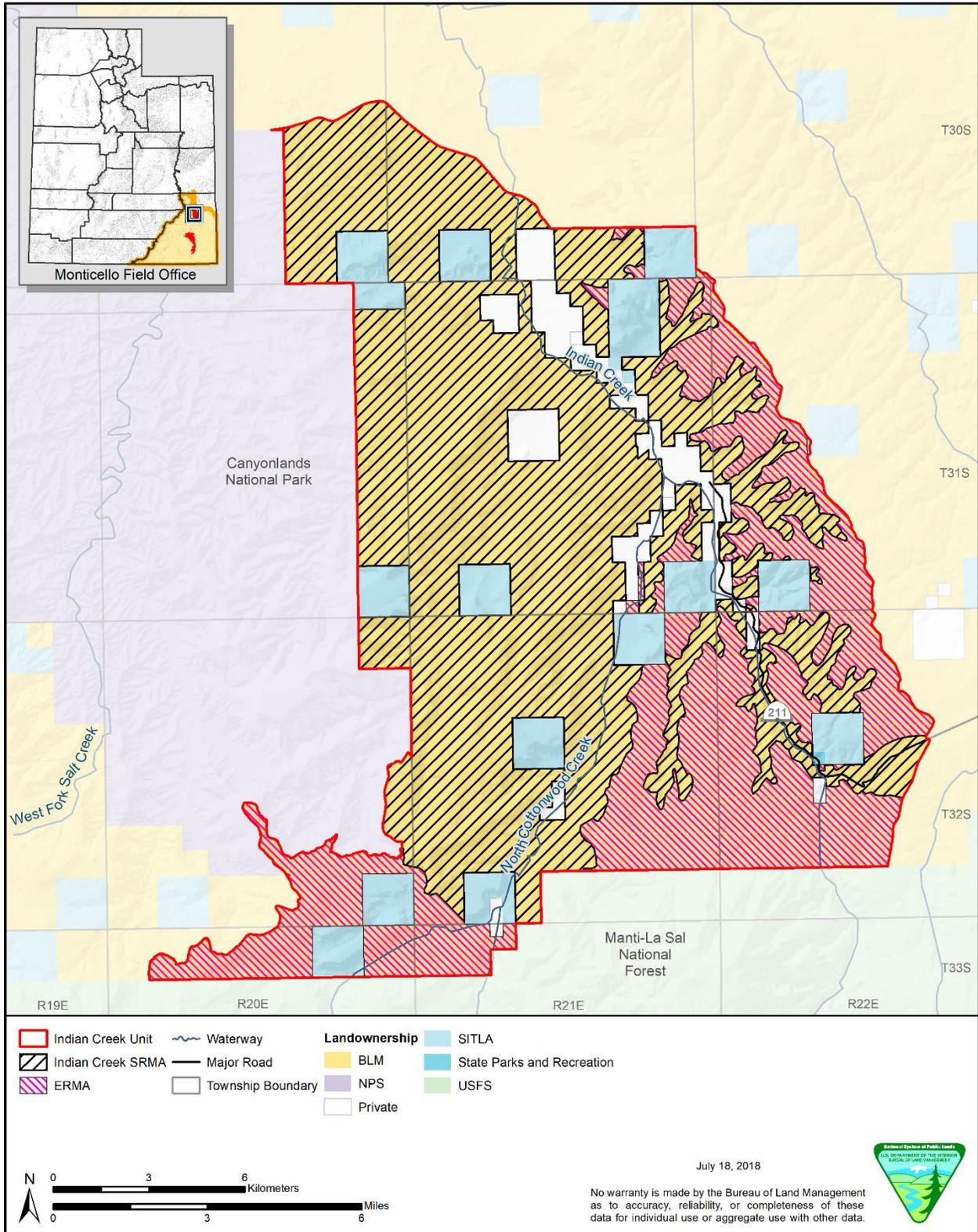
Map 2-20. Indian Creek Unit: Areas Unavailable for Grazing - Alternative D



Map 2-21. Shash Jáa Unit: Special Recreation Management Areas and Recreation Management Zones - Alternative A

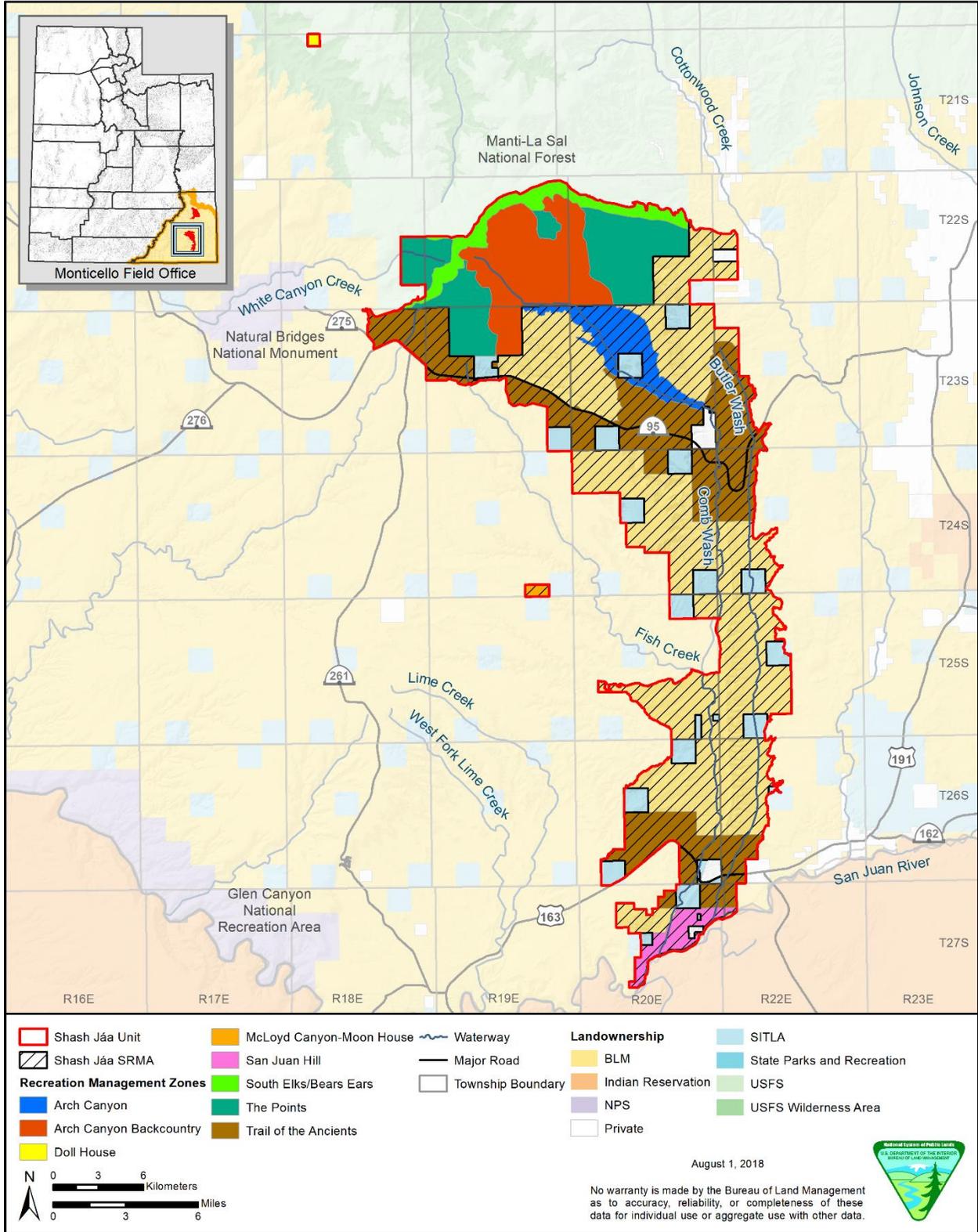


Map 2-22. Indian Creek Unit: Special Recreation Management Areas and Recreation Management Zones - Alternatives A, B, C, and D

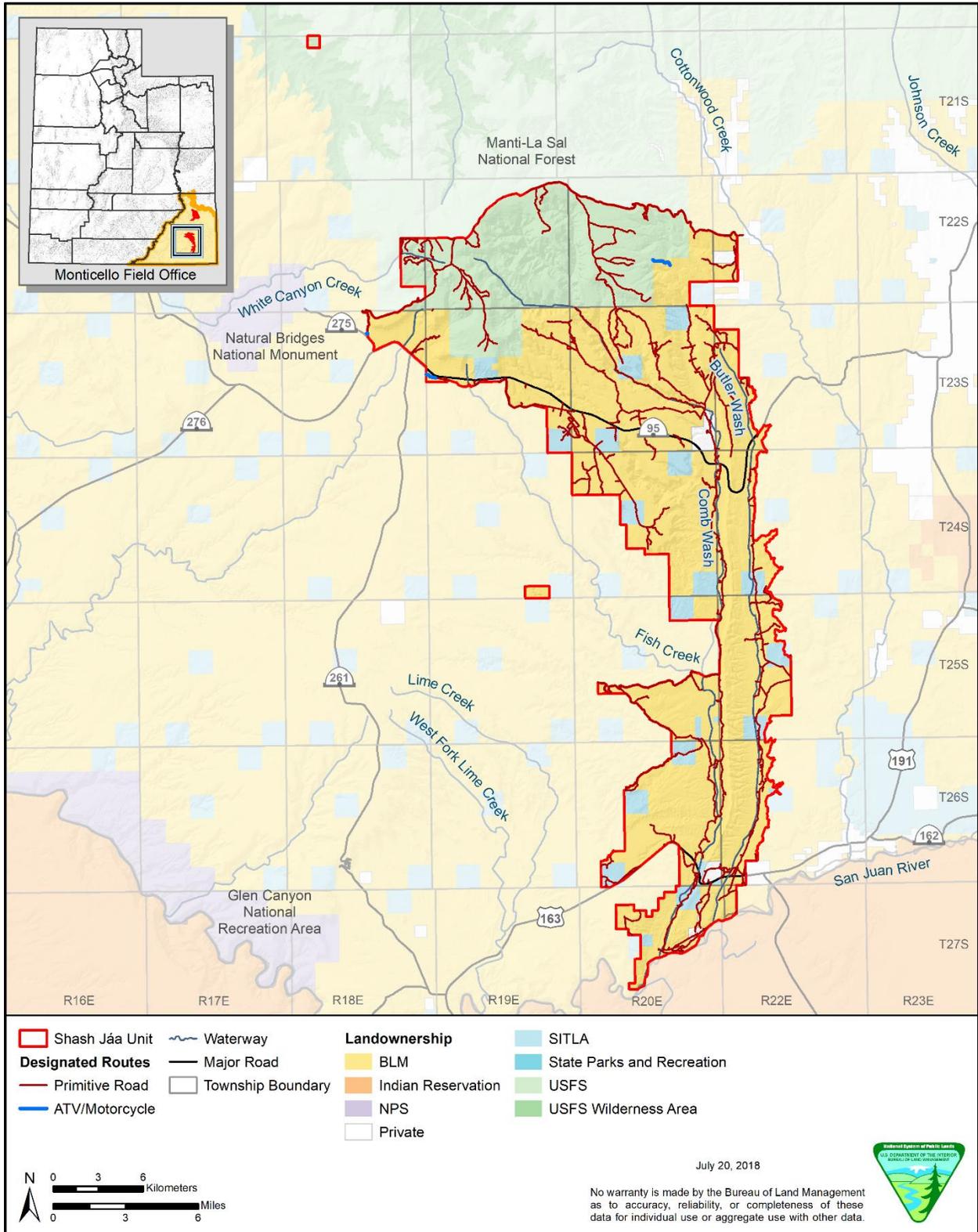


Note: Indian Creek SRMA and Indian Creek ERMA boundaries under Alternatives B–D are the same as the Indian Creek SRMA and Monticello ERMA boundaries under Alternative A; the only difference is the name of the ERMA under Alternative A.

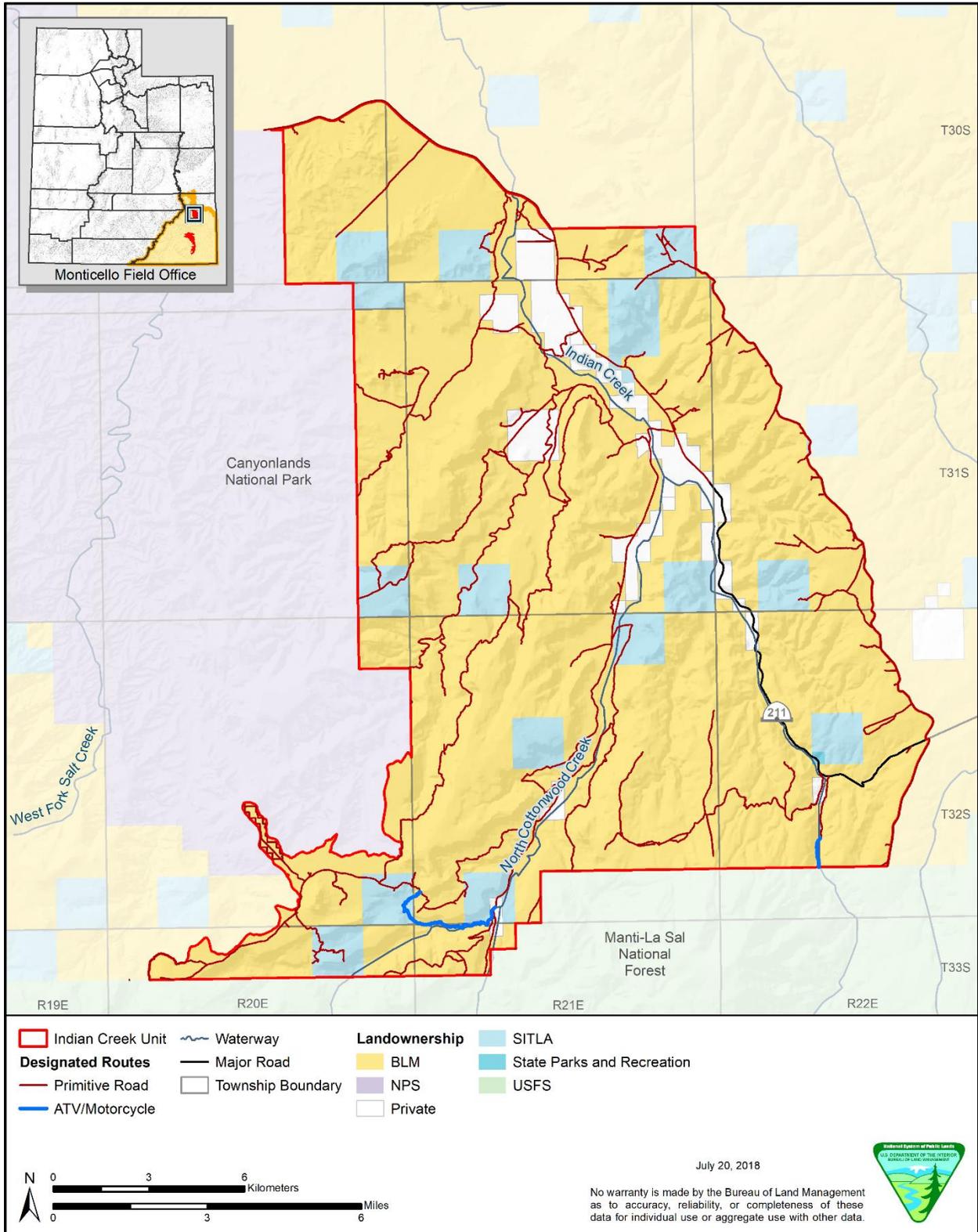
Map 2-23. Shash Jáa Unit: Special Recreation Management Areas and Recreation Management Zones - Alternatives B, C, and D



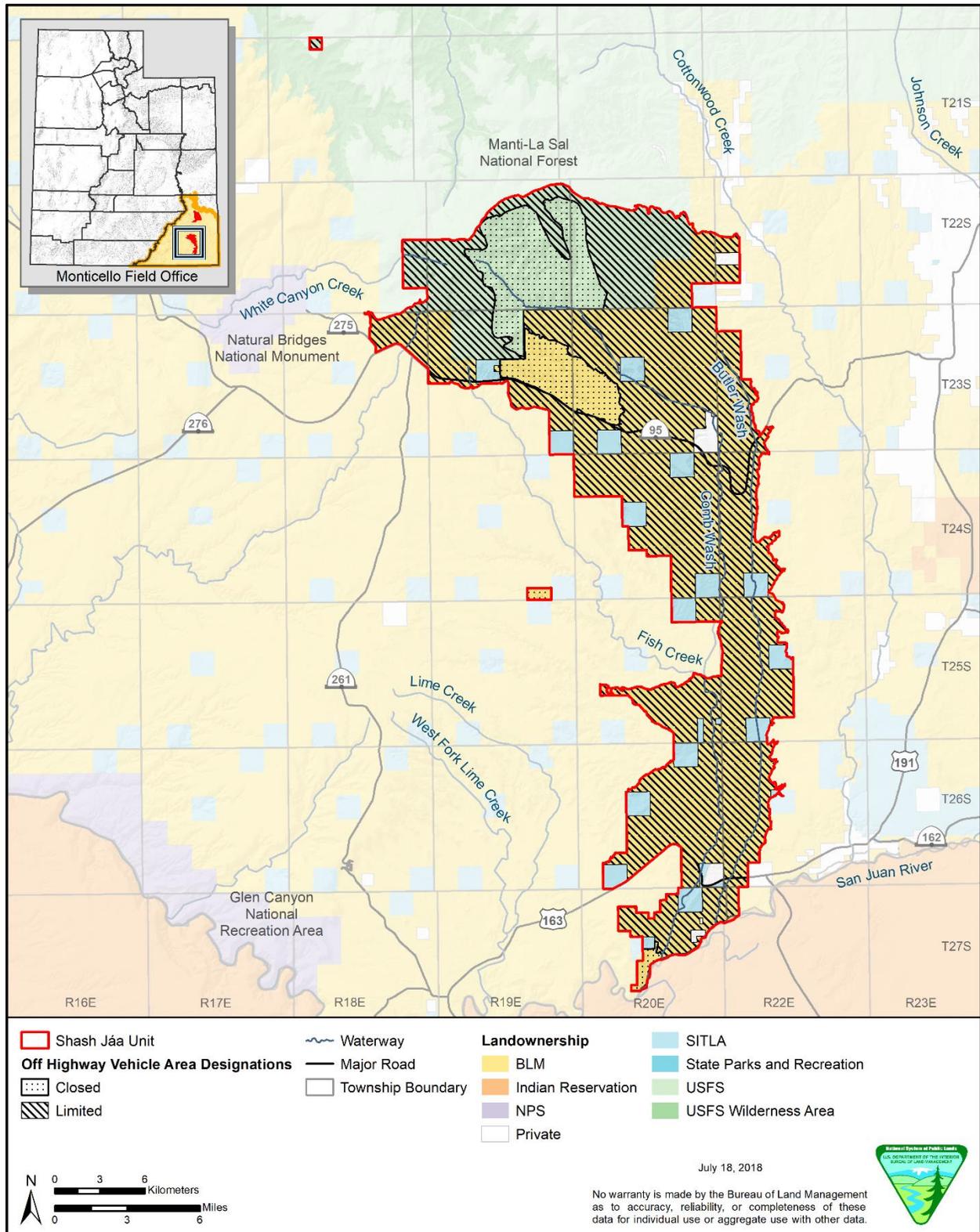
Map 2-24. Shash Jáa Unit: Existing Designated Routes



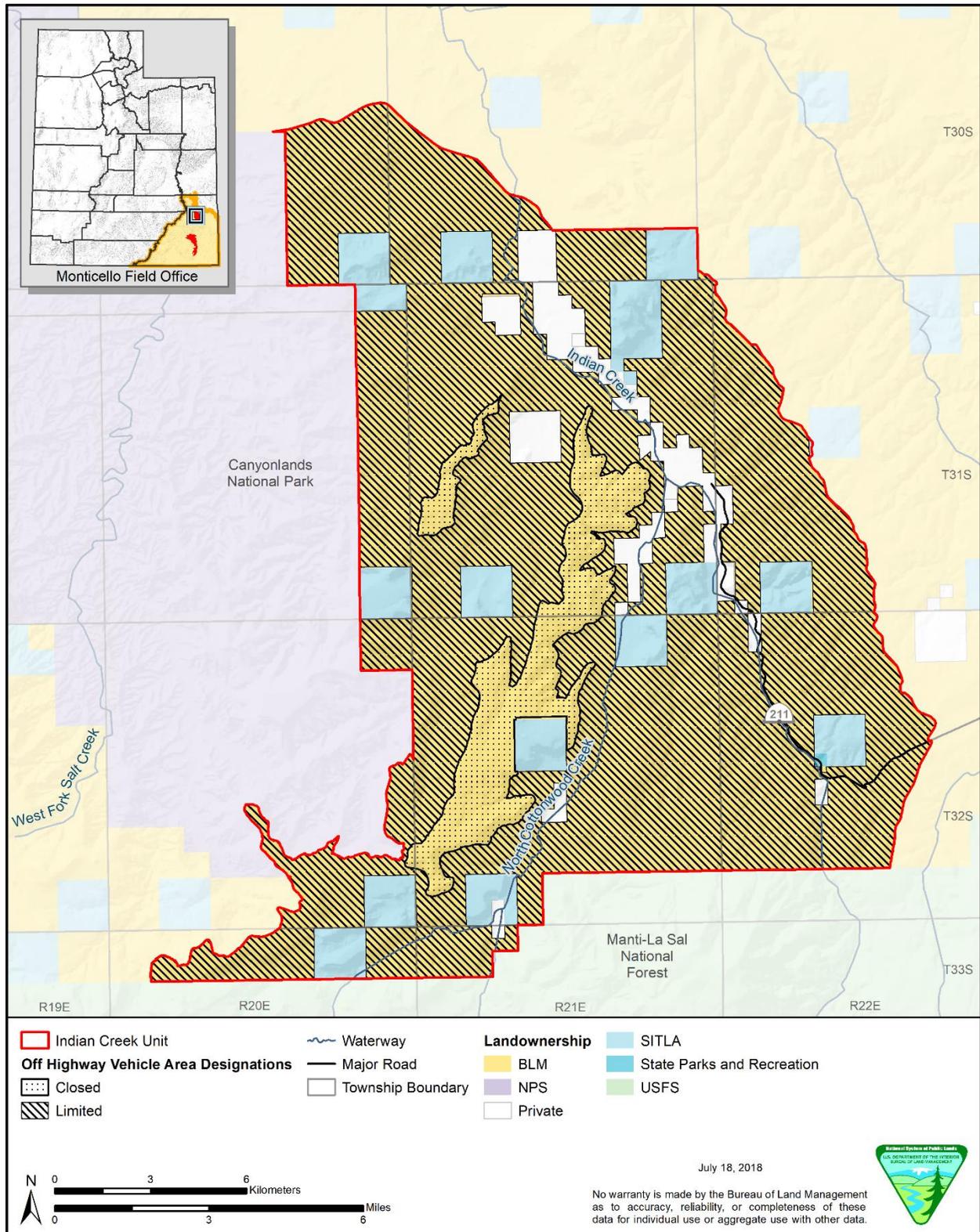
Map 2-25. Indian Creek Unit: Existing Designated Routes



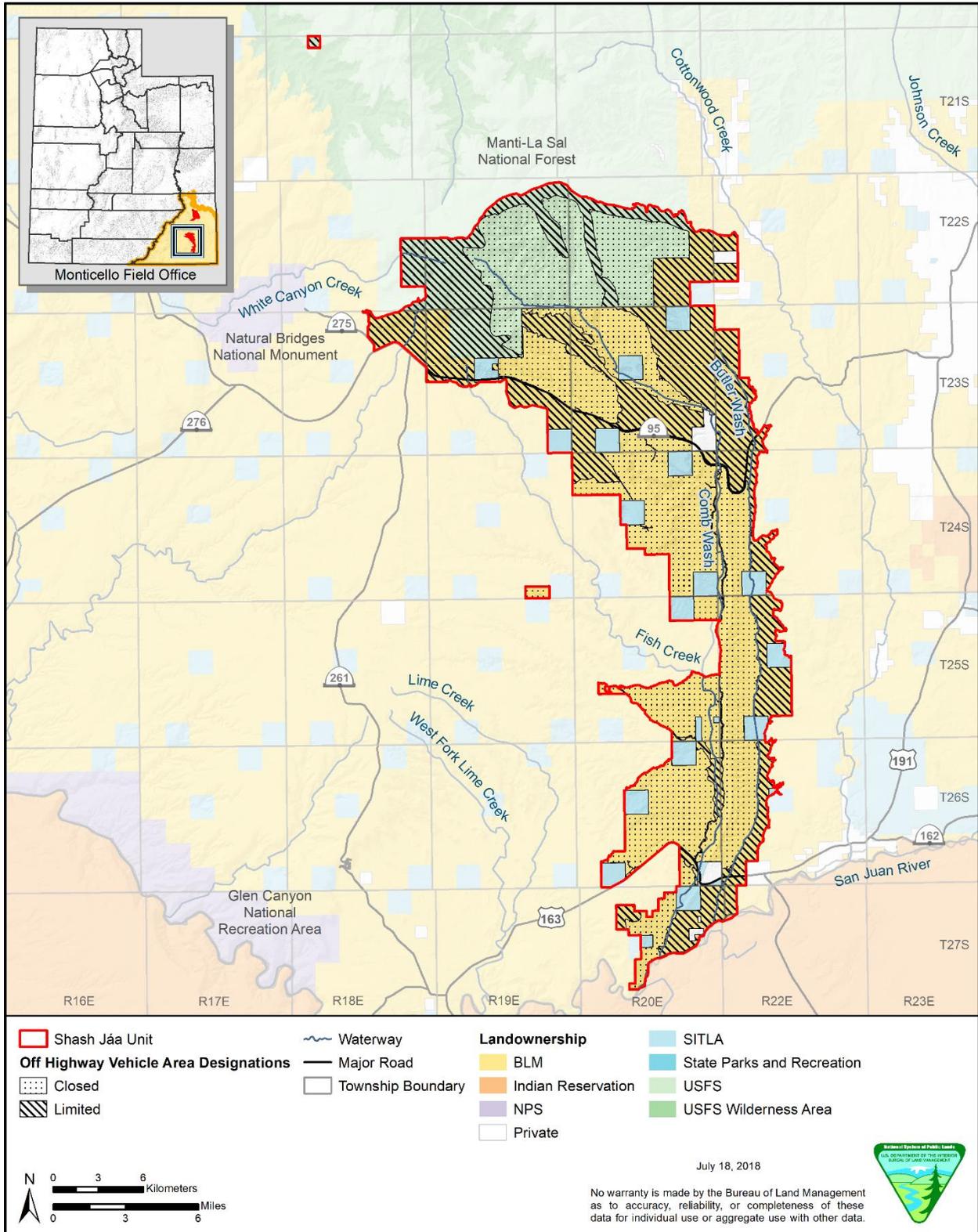
Map 2-26. Shash Jáa Unit: Off-Highway Vehicle Area Designations - Alternatives A, C, and D



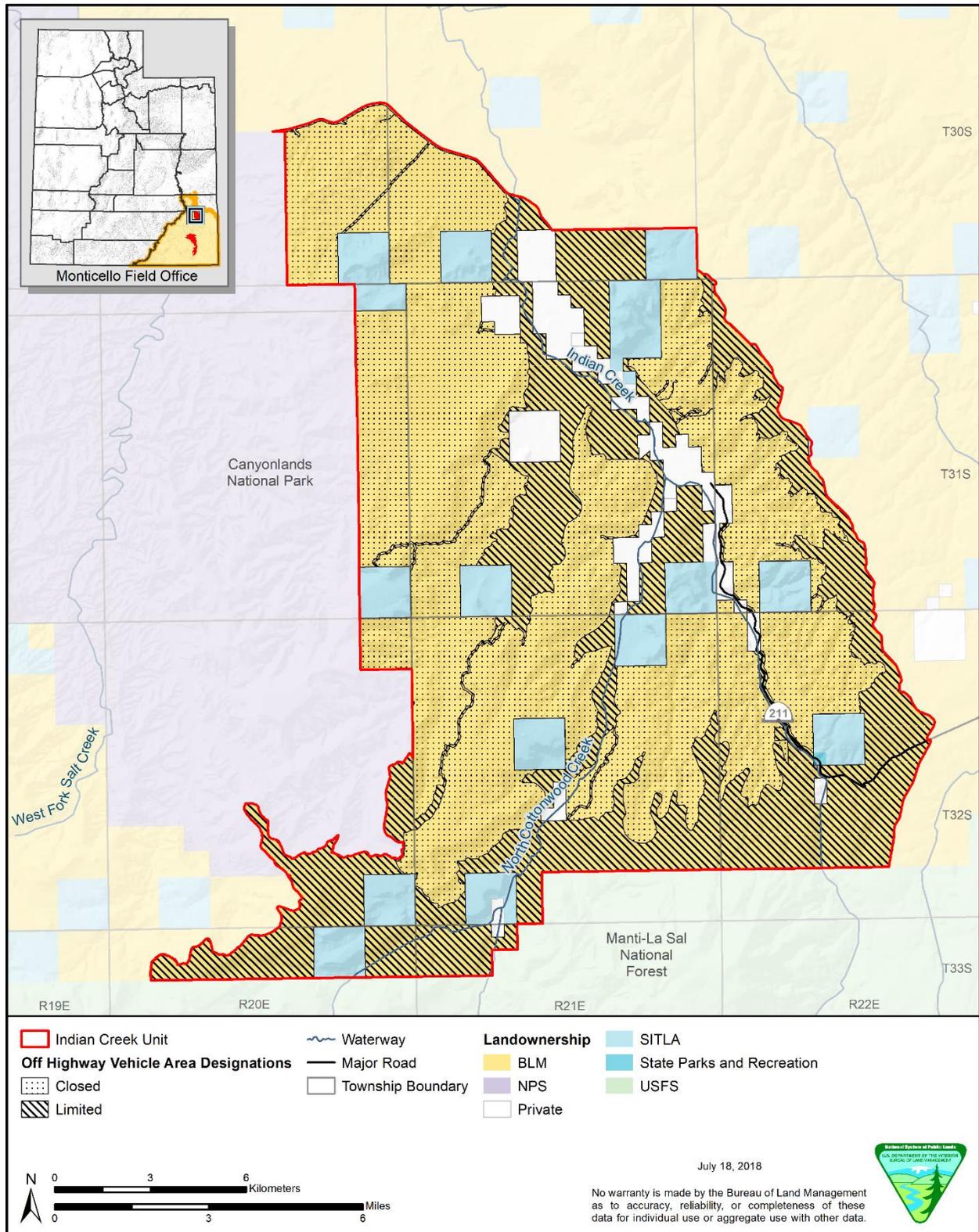
Map 2-27. Indian Creek Unit: Off-Highway Vehicle Area Designations - Alternatives A, C, and D



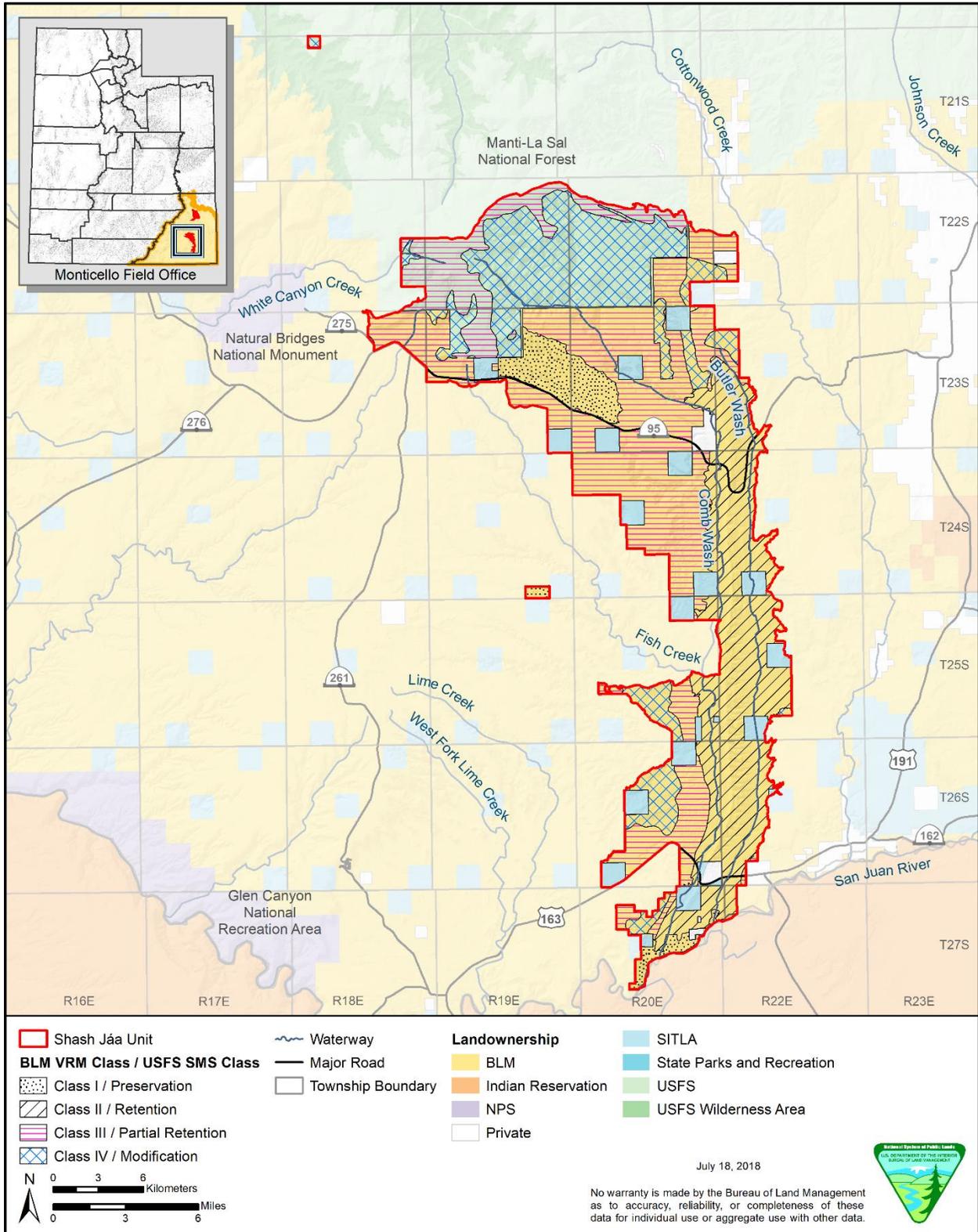
Map 2-28. Shash Jáa Unit: Off-Highway Vehicle Area Designations - Alternative B



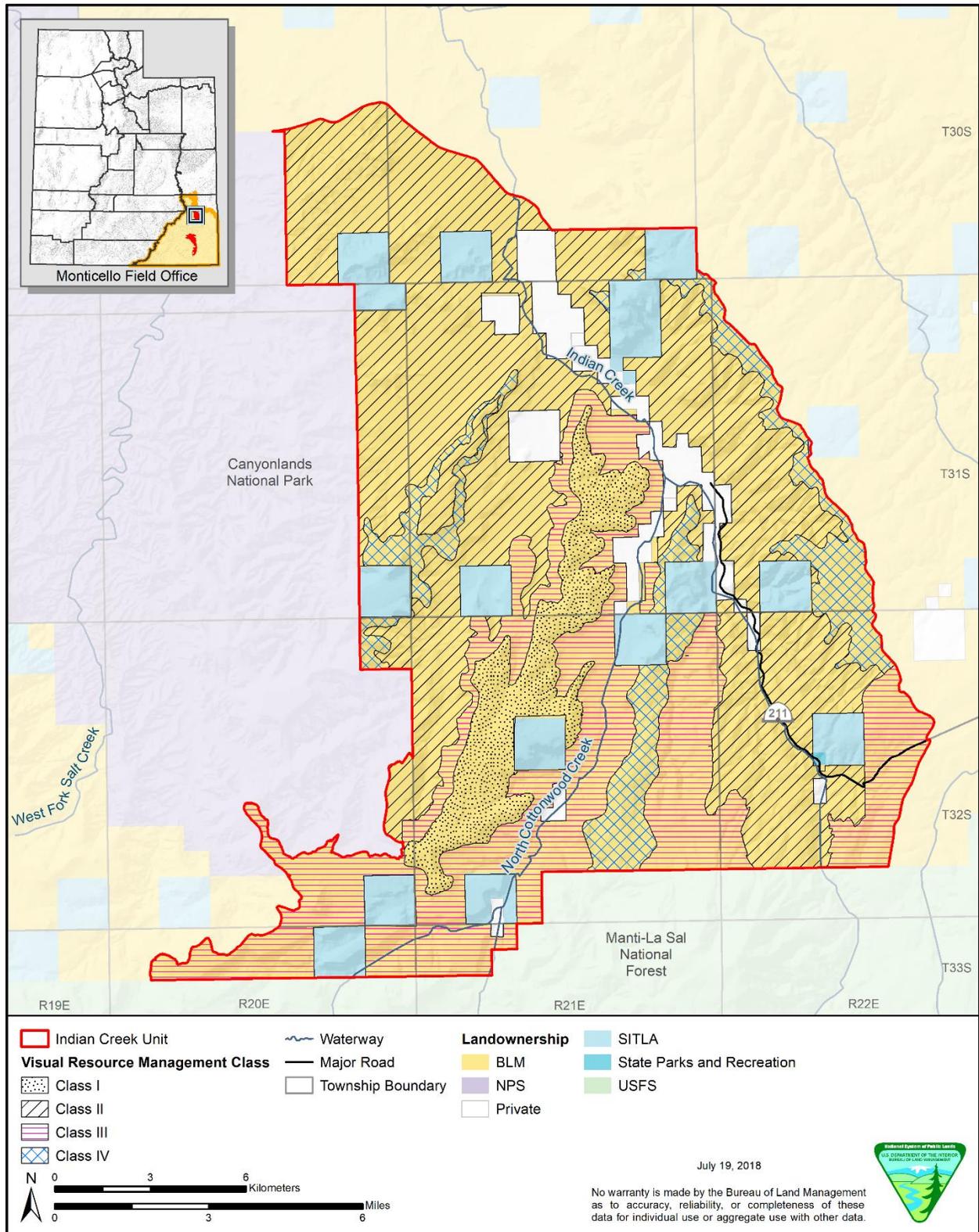
Map 2-29. Indian Creek Unit: Off-Highway Vehicle Area Designations - Alternative B



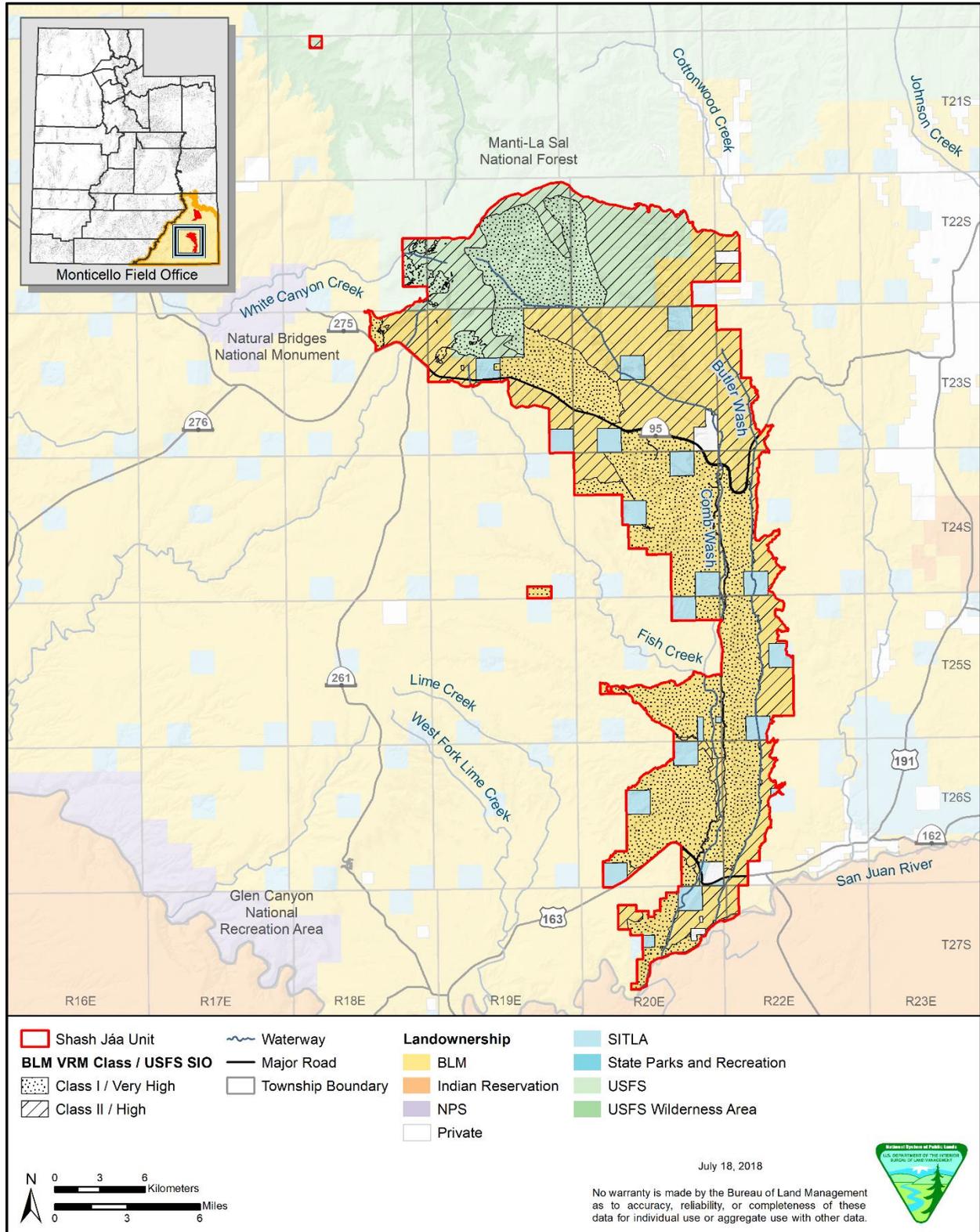
Map 2-30. Shash Jaa Unit: Visual Resource Management - Alternative A



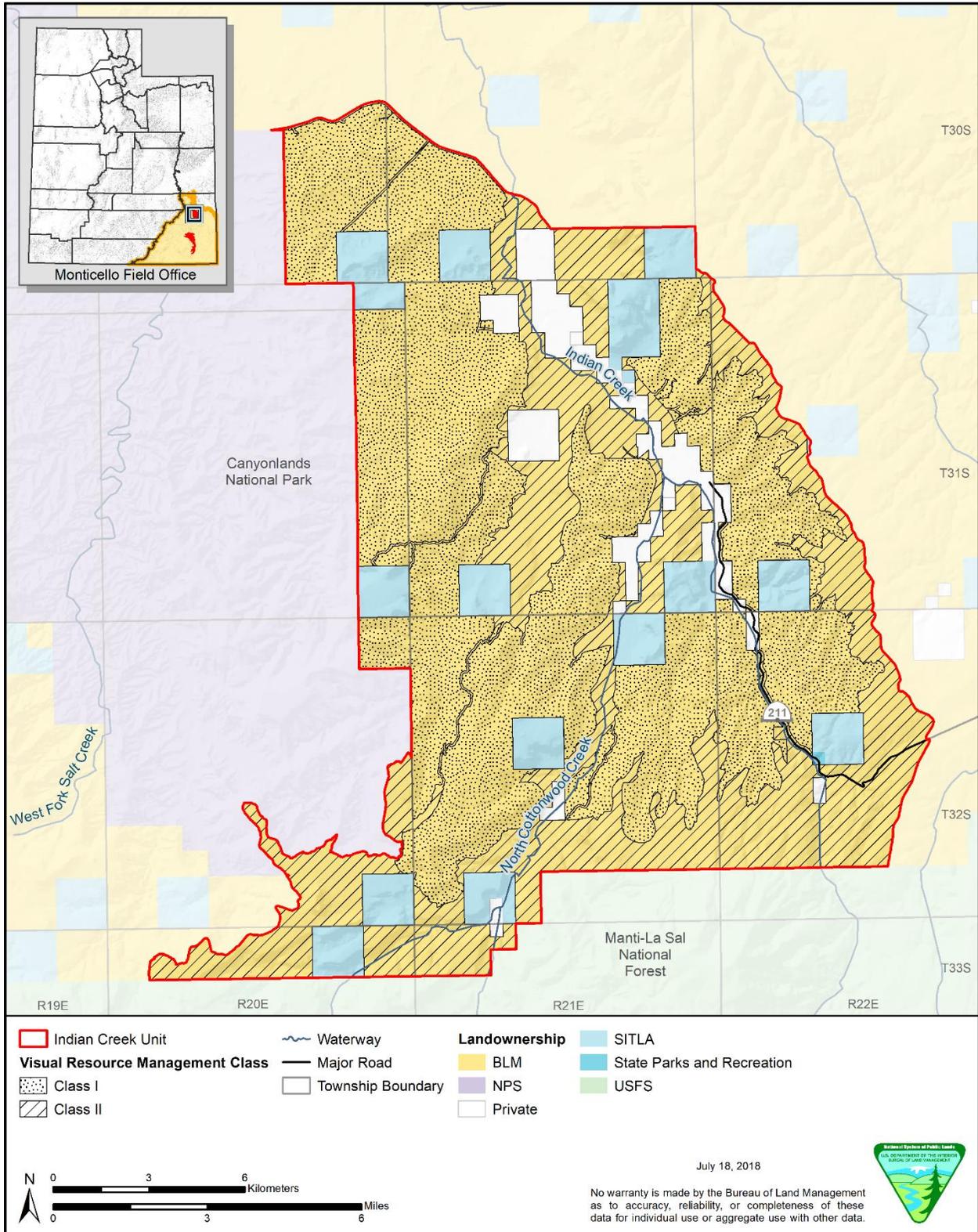
Map 2-31. Indian Creek Unit: Visual Resource Management - Alternative A



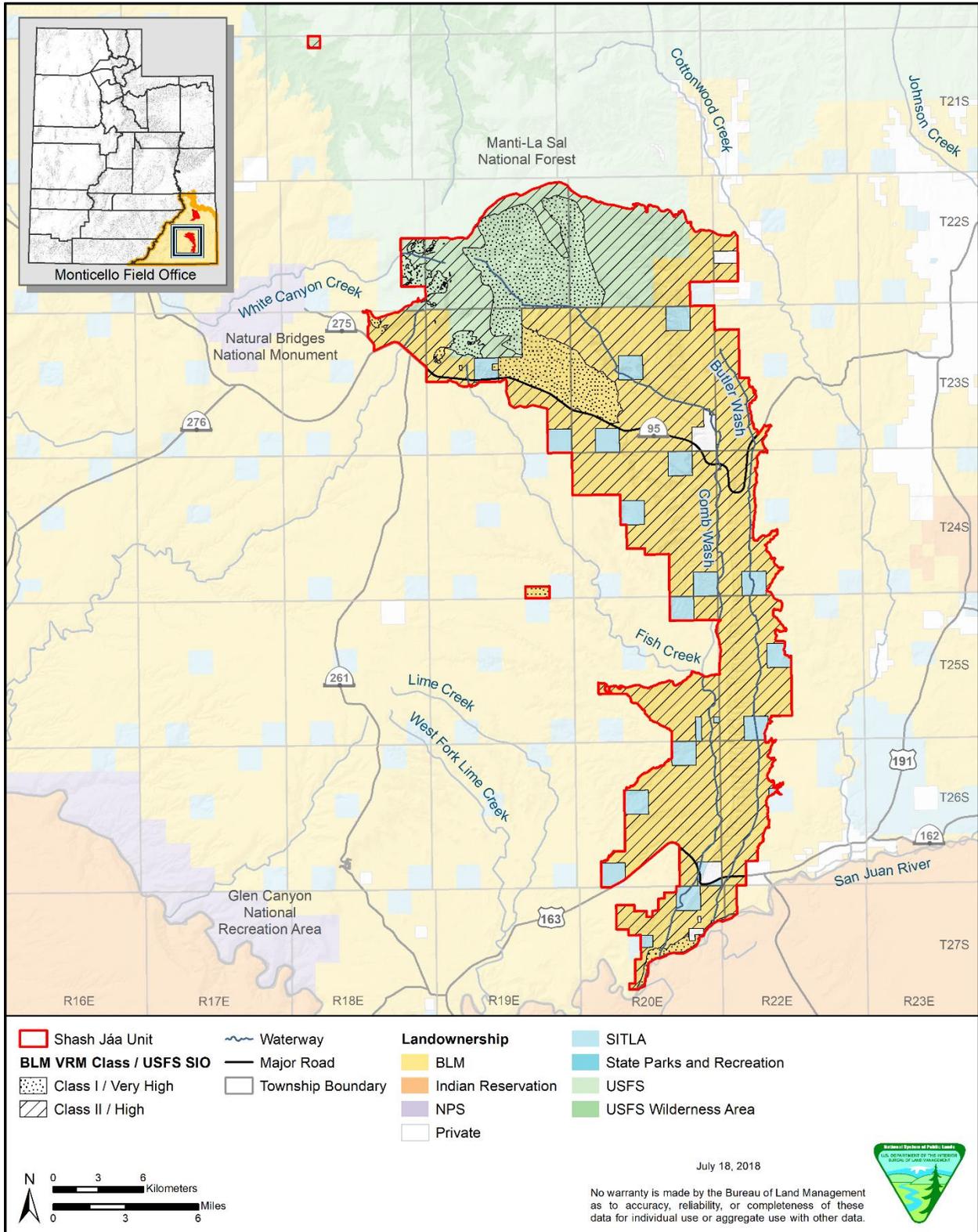
Map 2-32. Shash Jáa Unit: Visual Resource Management - Alternative B



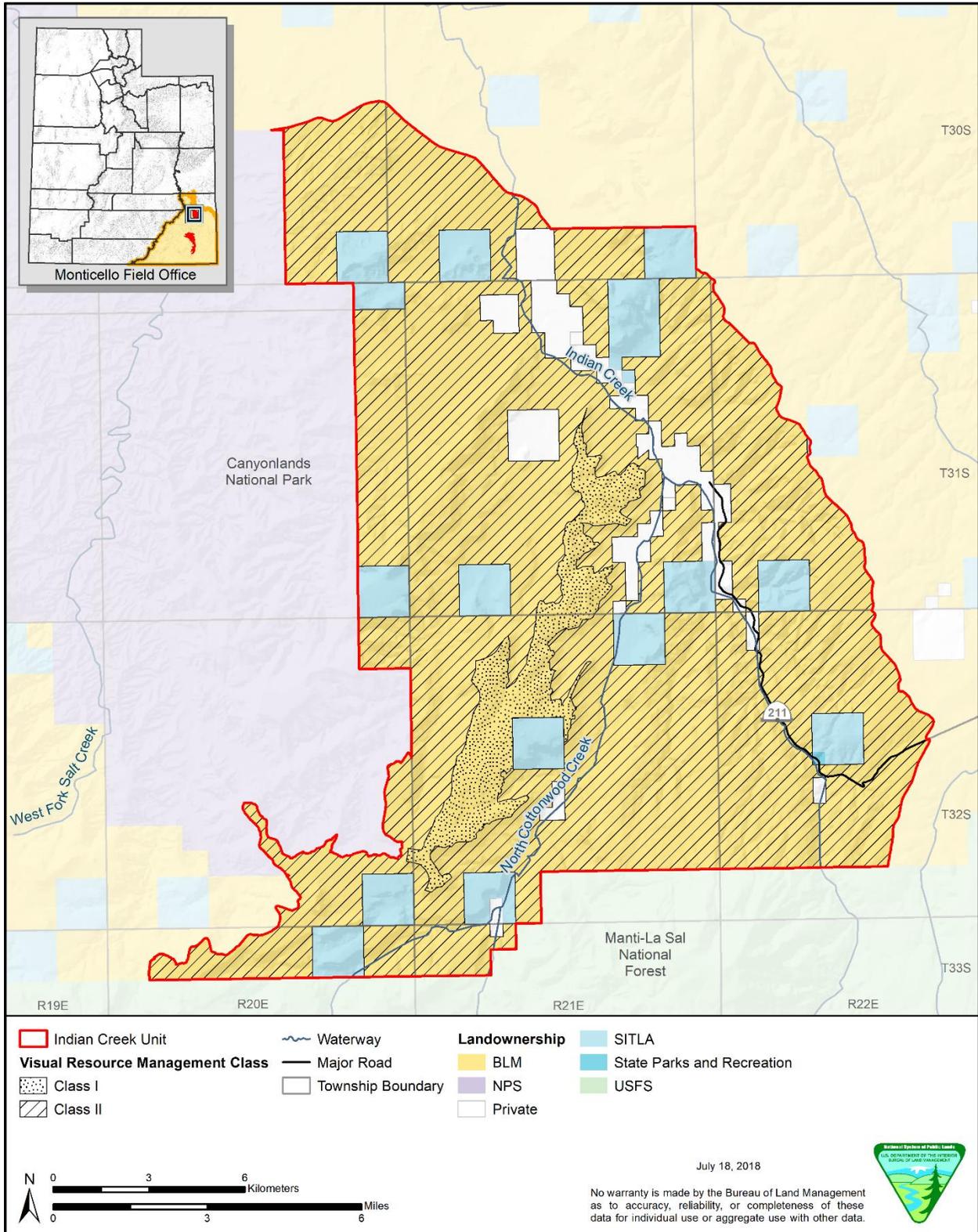
Map 2-33. Indian Creek Unit: Visual Resource Management - Alternative B



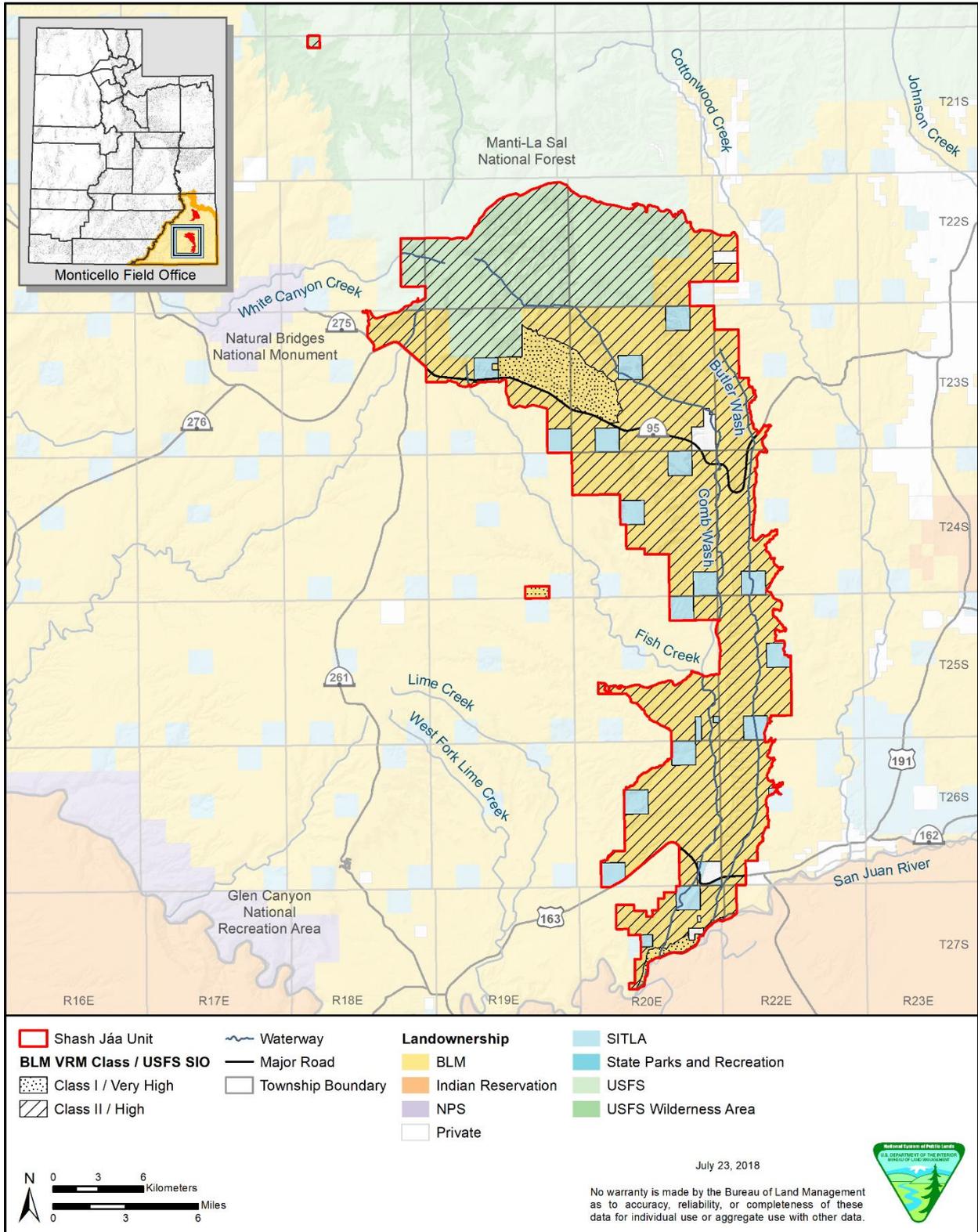
Map 2-34. Shash Jáa Unit: Visual Resource Management - Alternative C



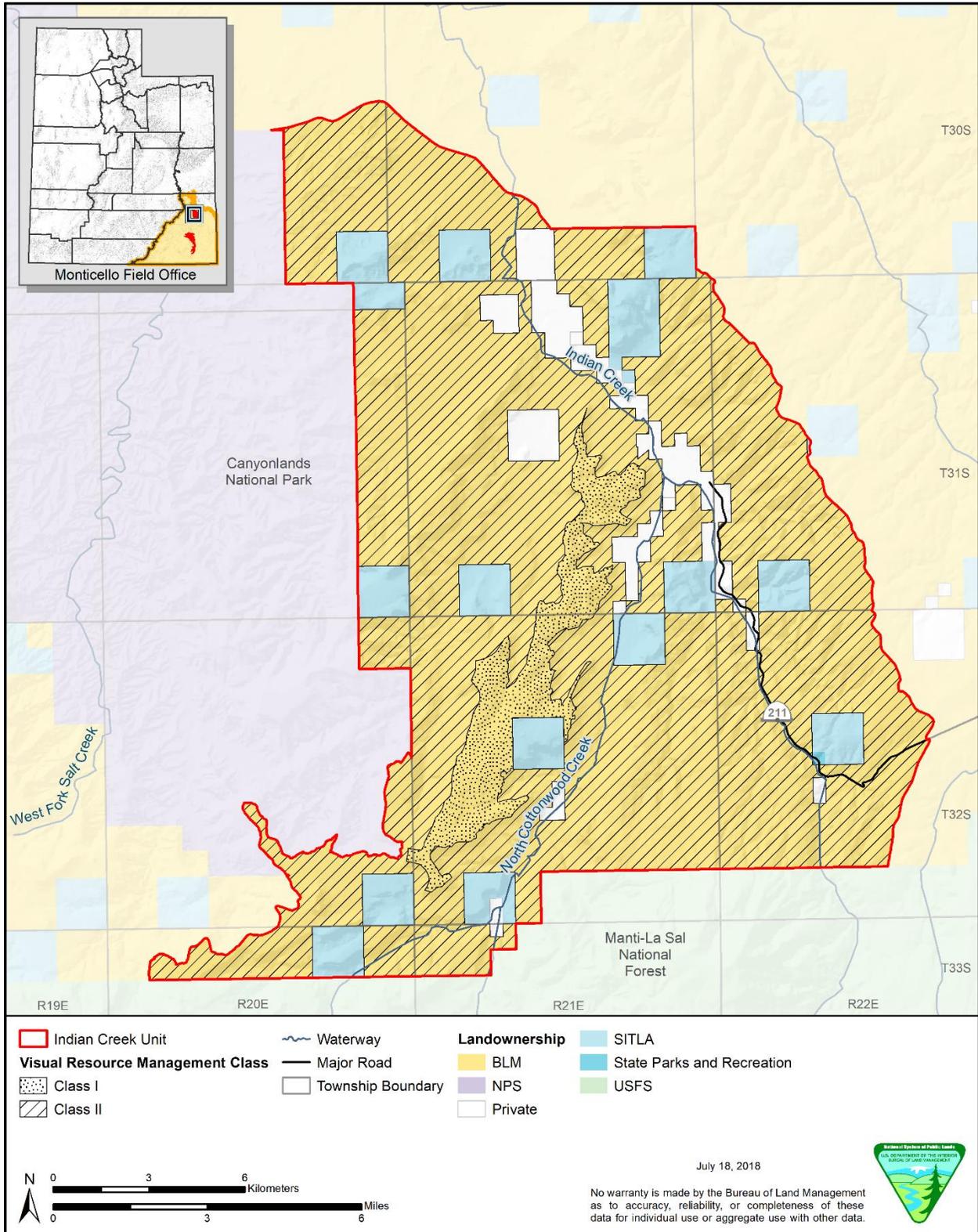
Map 2-35. Indian Creek Unit: Visual Resource Management - Alternative C



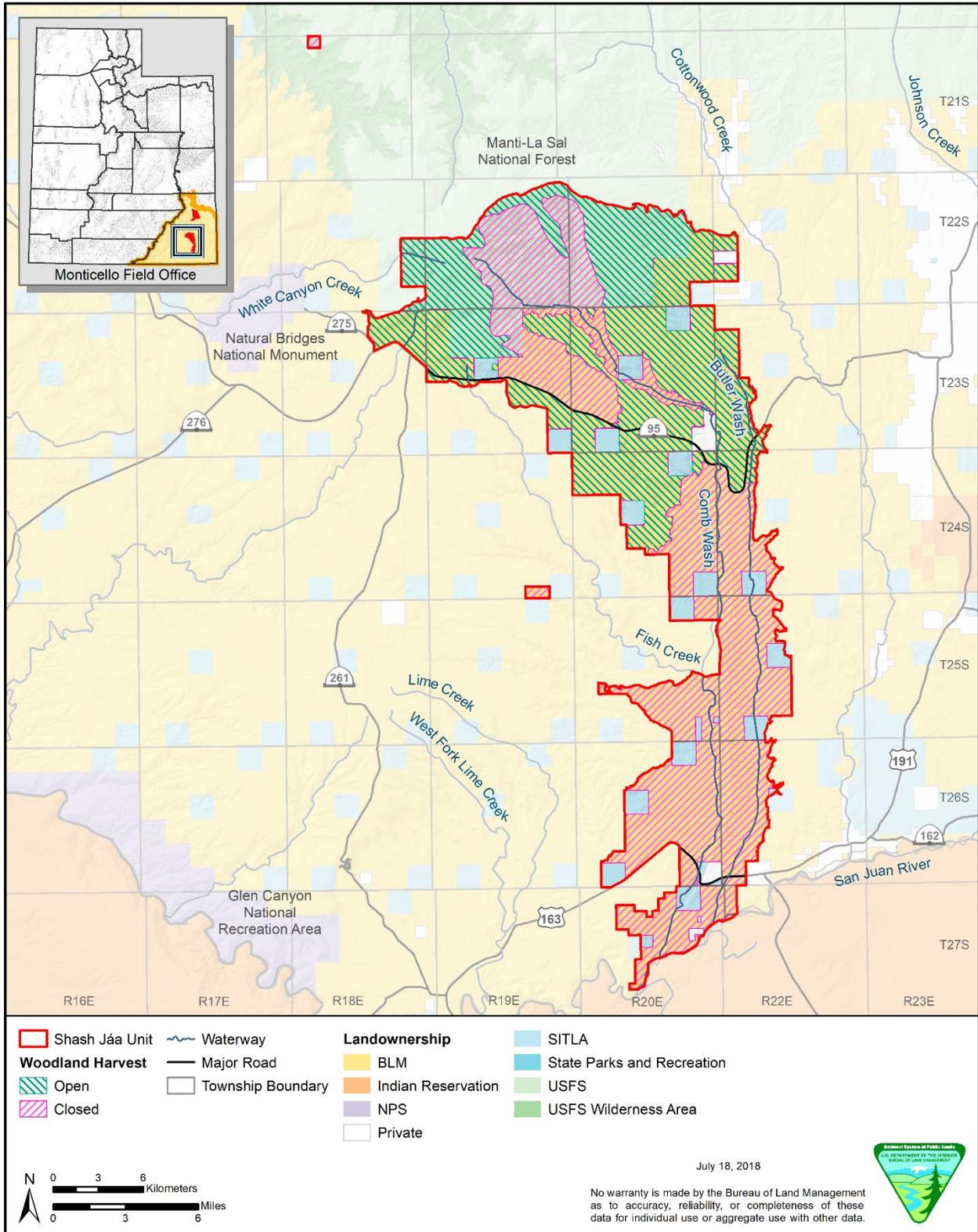
Map 2-36. Shash Jáa Unit: Visual Resource Management - Alternative D



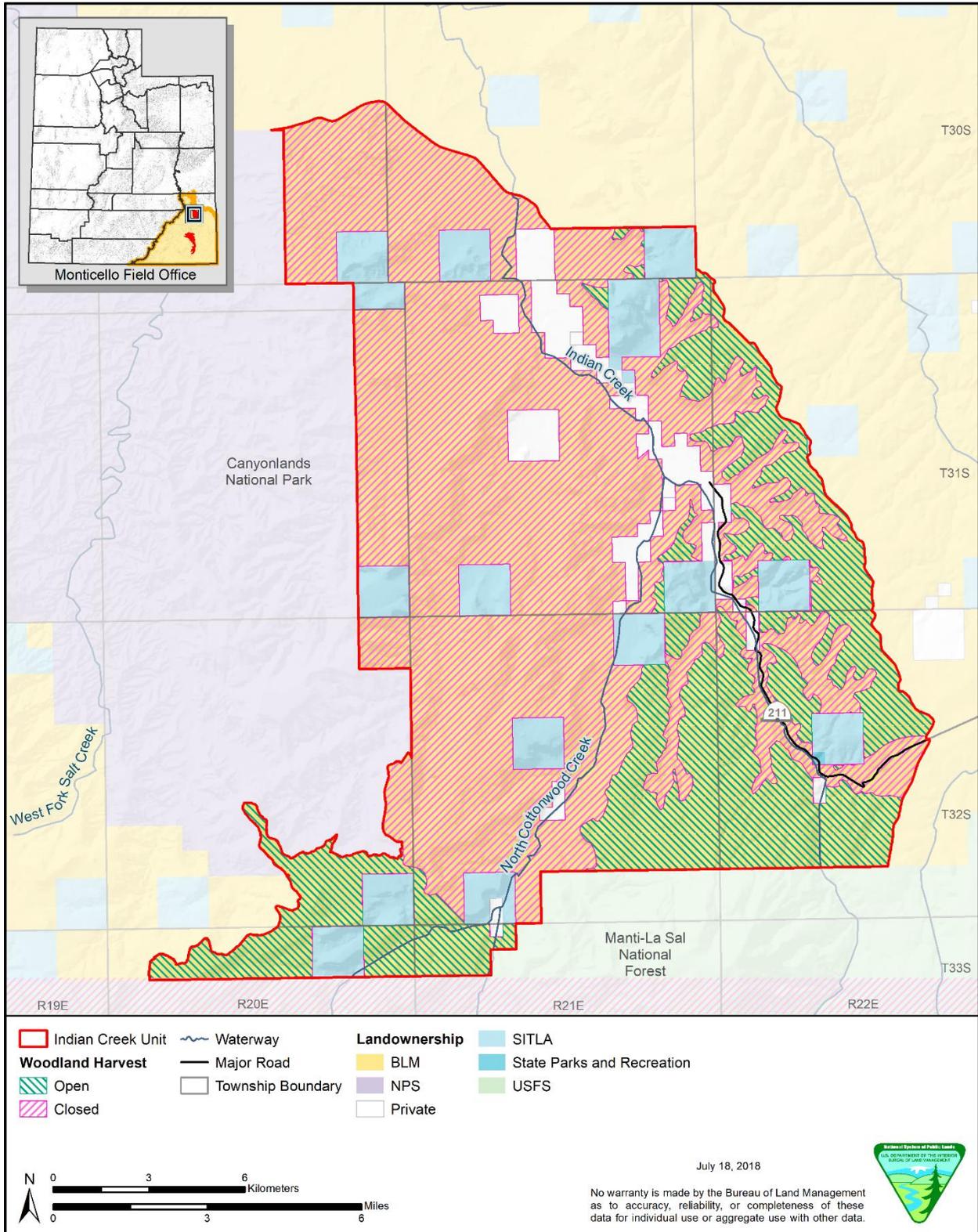
Map 2-37. Indian Creek Unit: Visual Resource Management - Alternative D



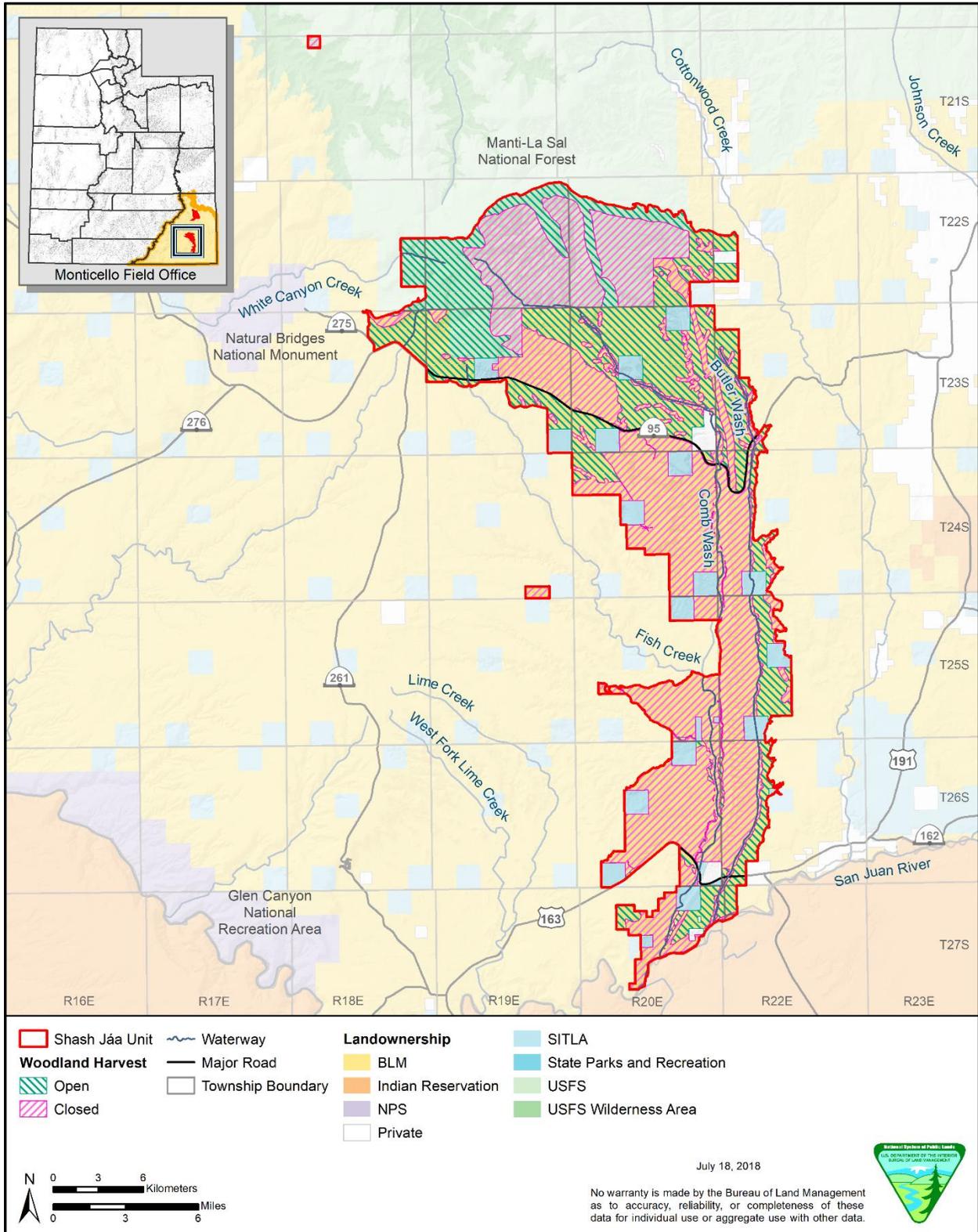
Map 2-38. Shash Jáa Unit: Forestry and Woodlands - Alternative A



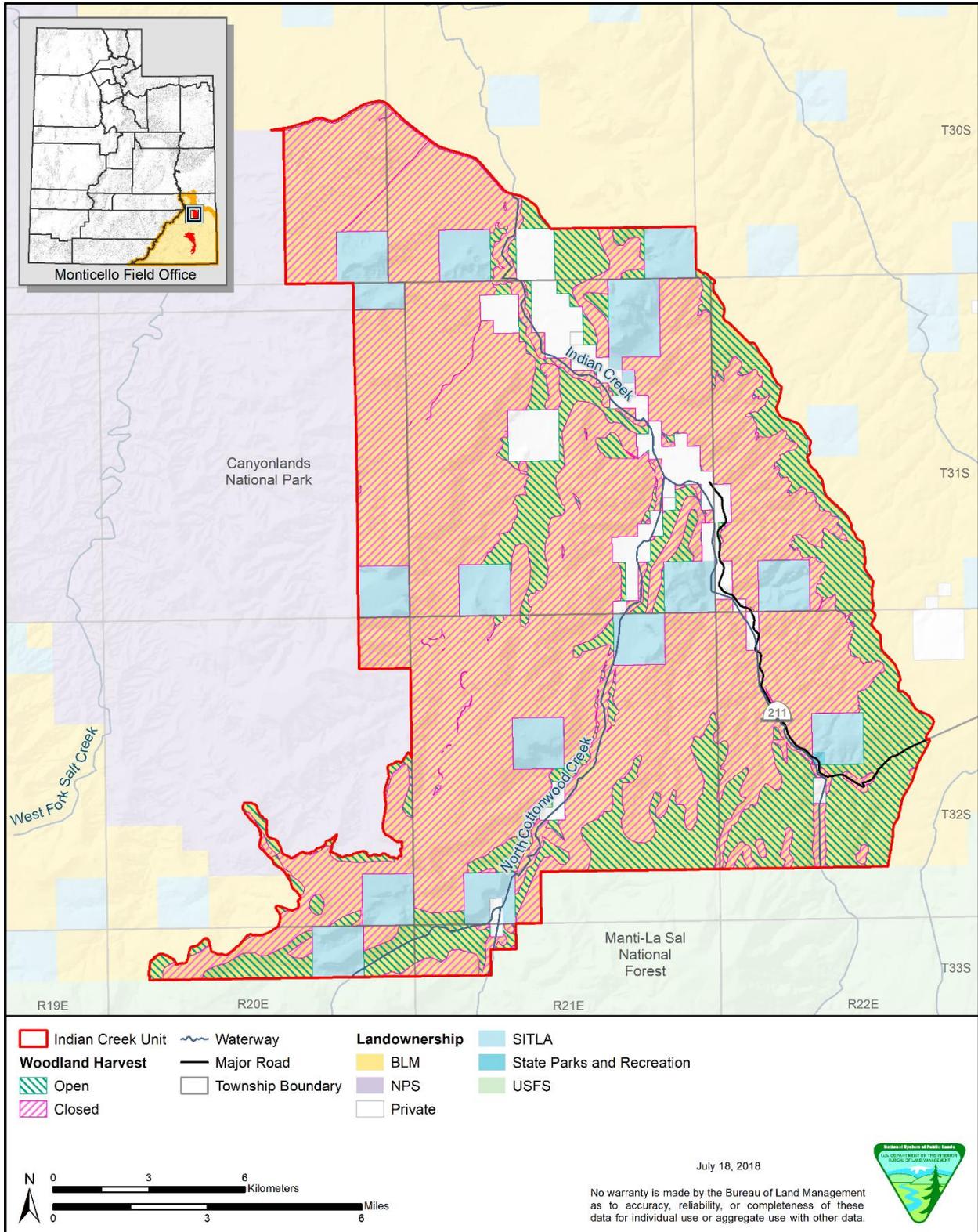
Map 2-39. Indian Creek Unit: Forestry and Woodlands - Alternative A



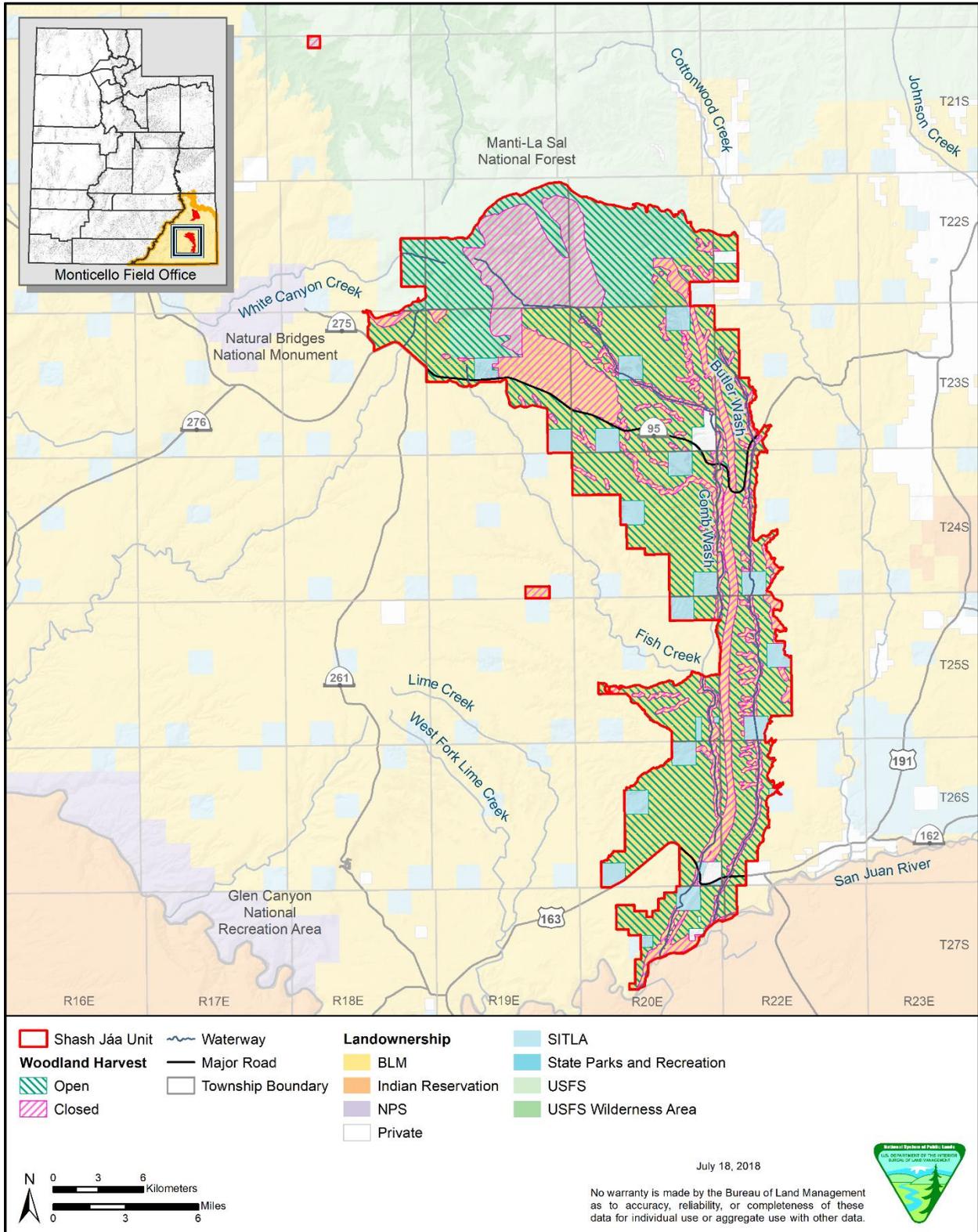
Map 2-40. Shash Jáa Unit: Forestry and Woodlands - Alternatives B



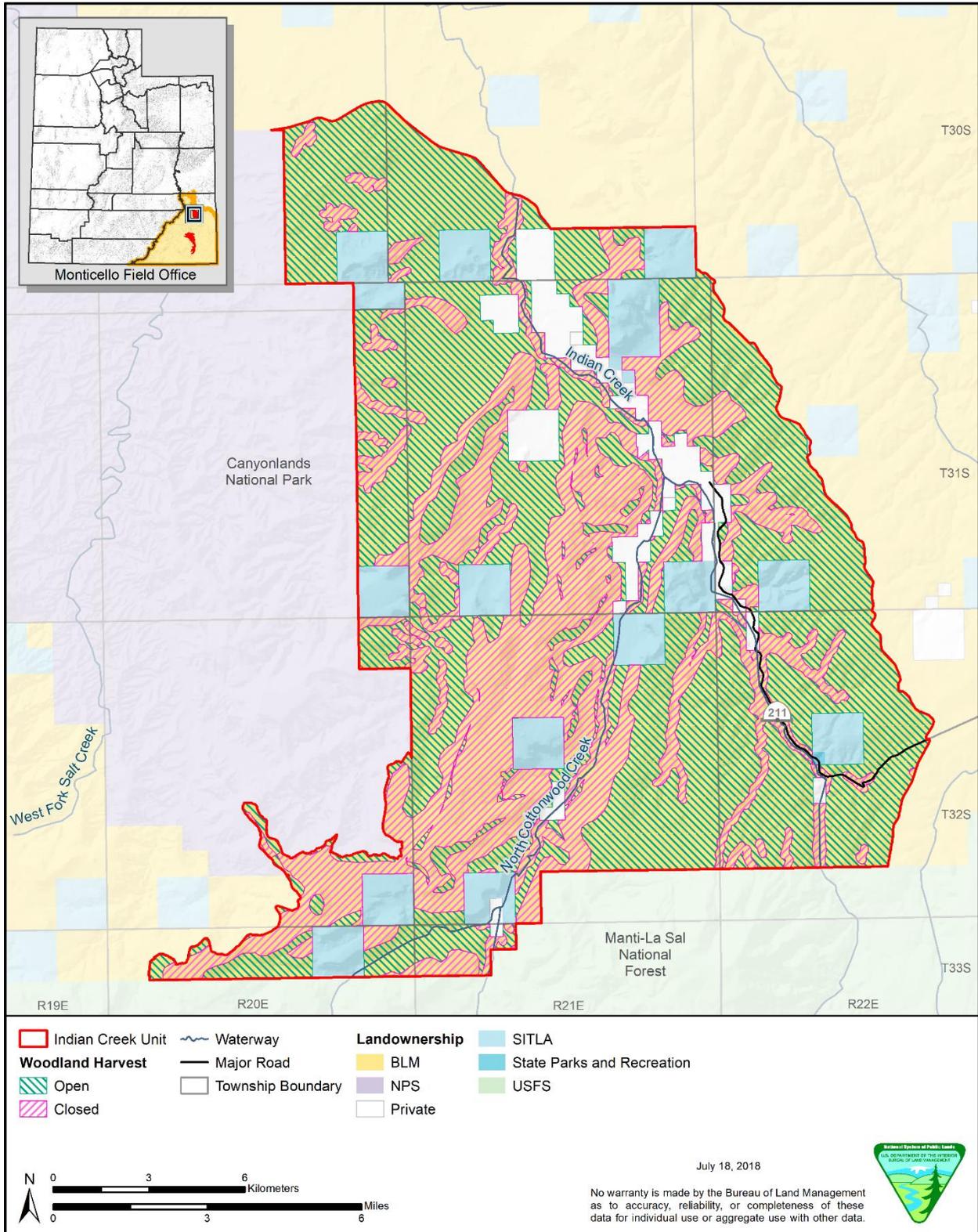
Map 2-41. Indian Creek Unit: Forestry and Woodlands - Alternative B



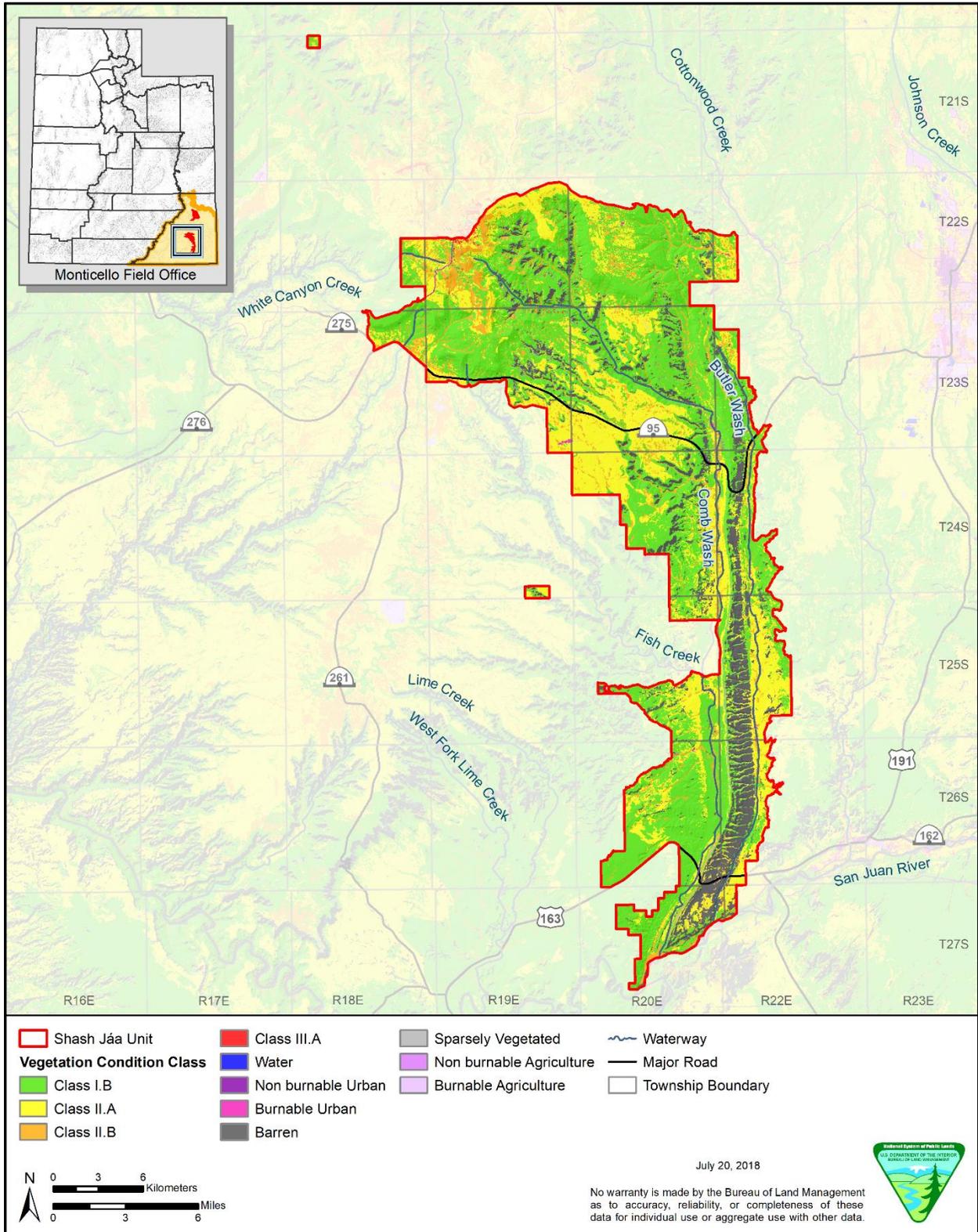
Map 2-42. Shash Jáa Unit: Forestry and Woodlands - Alternatives C and D



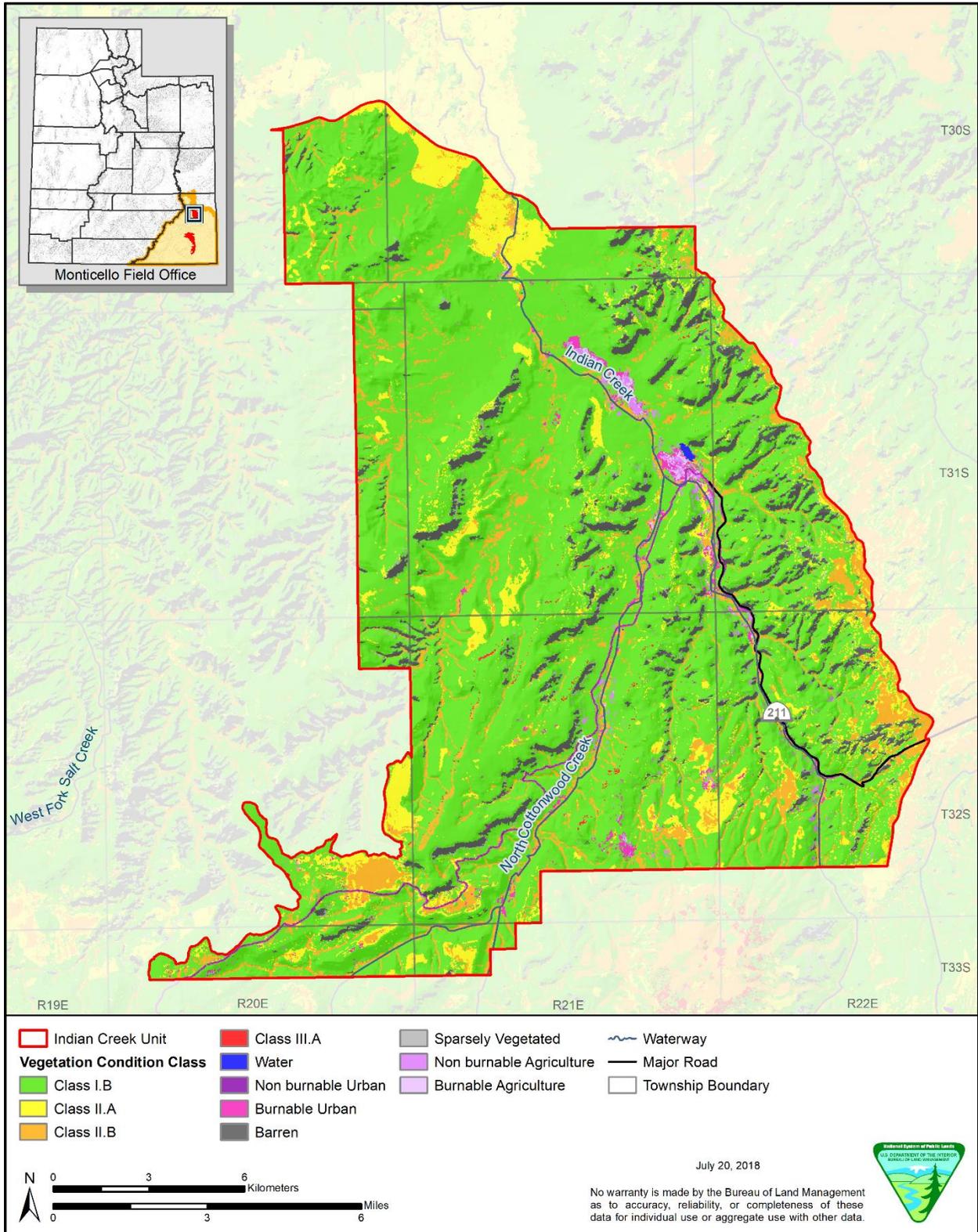
Map 2-43. Indian Creek Unit: Forestry and Woodlands - Alternatives C and D



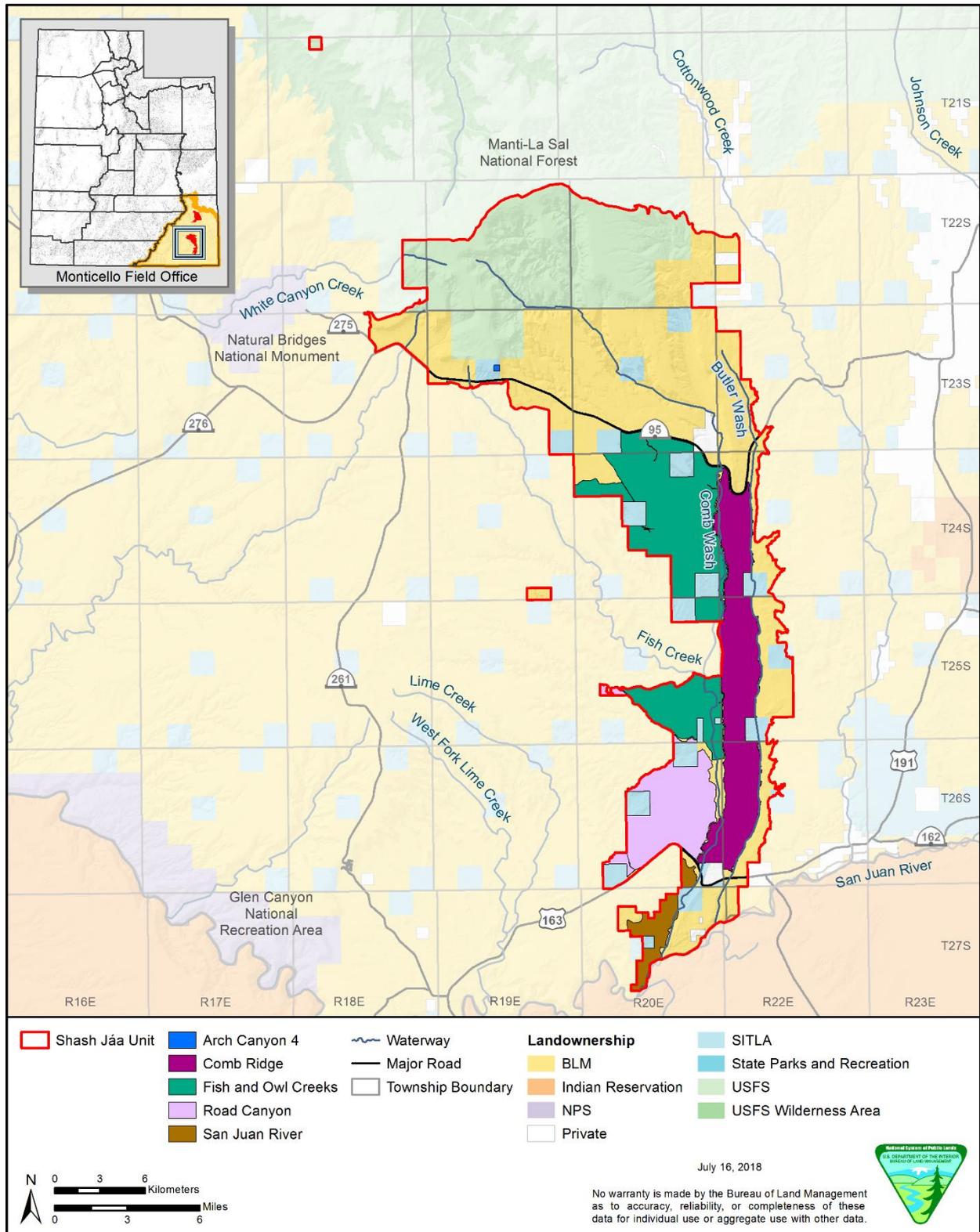
Map FIRE-1. Shash Jáa Unit: Vegetation Condition Classes



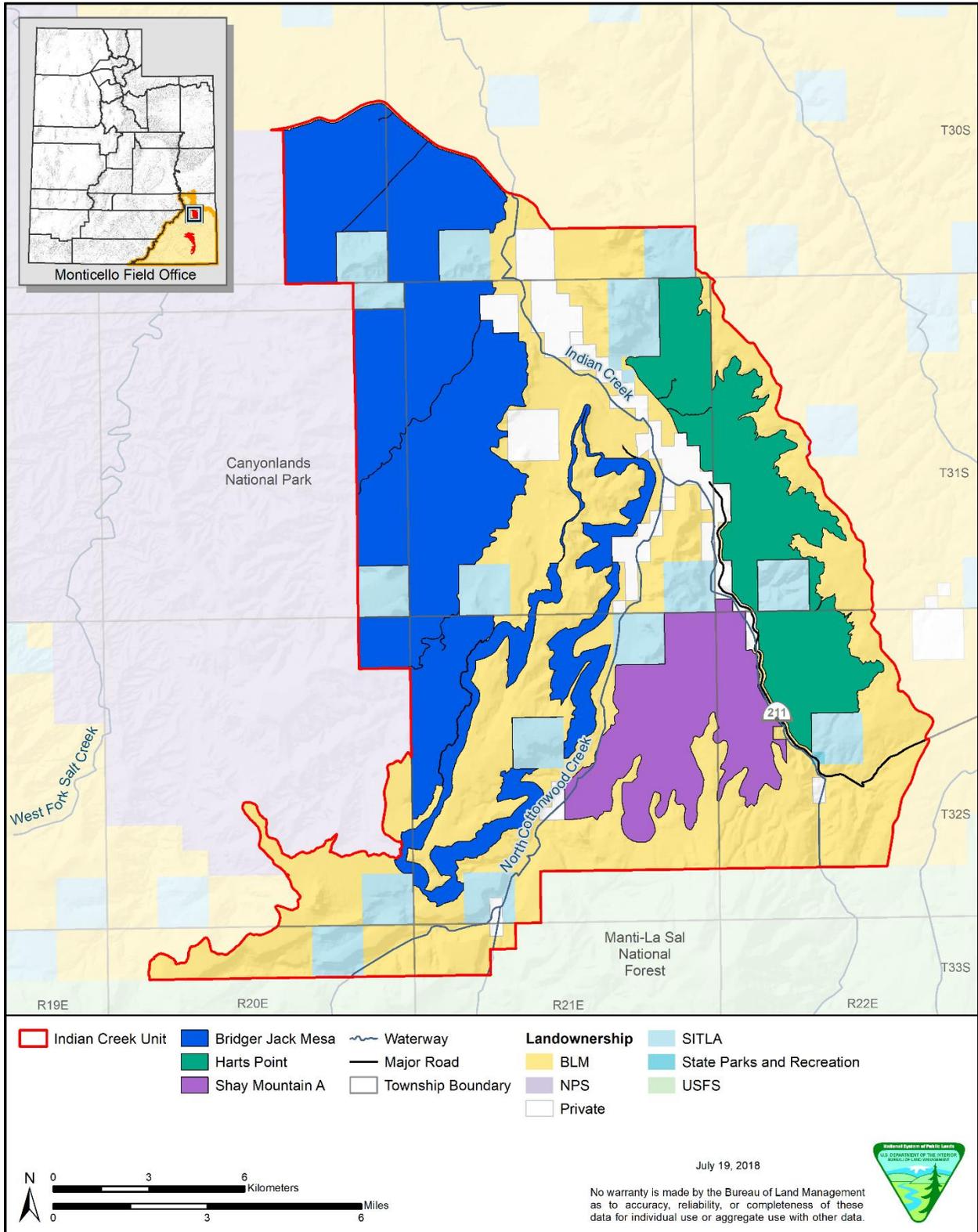
Map FIRE-2. Indian Creek Unit: Vegetation Condition Classes



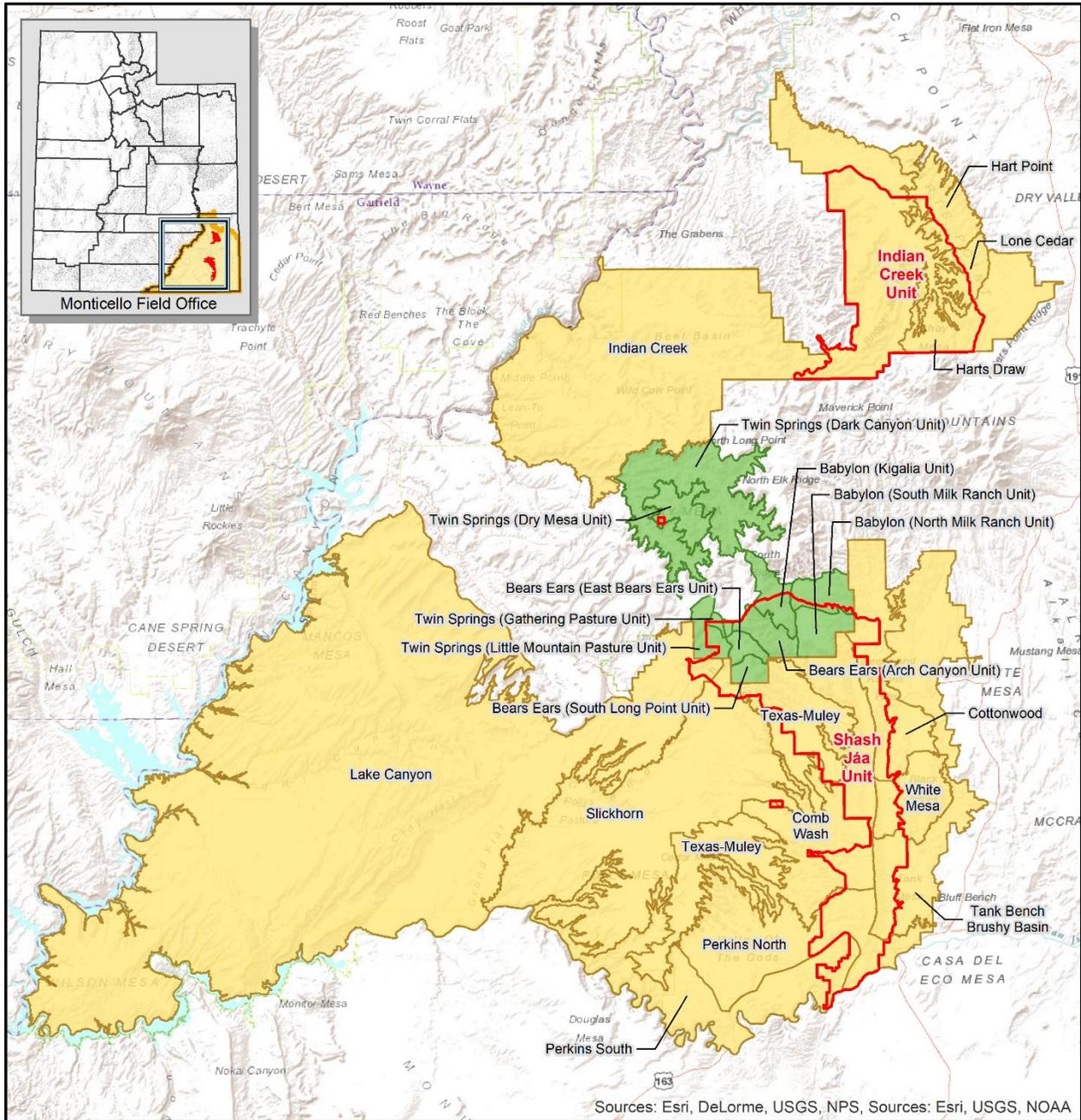
Map LWC-1. Shash Jáa Unit: Lands Inventoried and Found to Possess Wilderness Characteristics



Map LWC-2. Indian Creek Unit: Lands Inventoried and Found to Possess Wilderness Characteristics

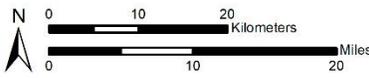


Map LSG-1. Livestock Grazing Analysis Area



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

- Planning Area
- BLM Grazing Allotments
- USFS Grazing Allotments

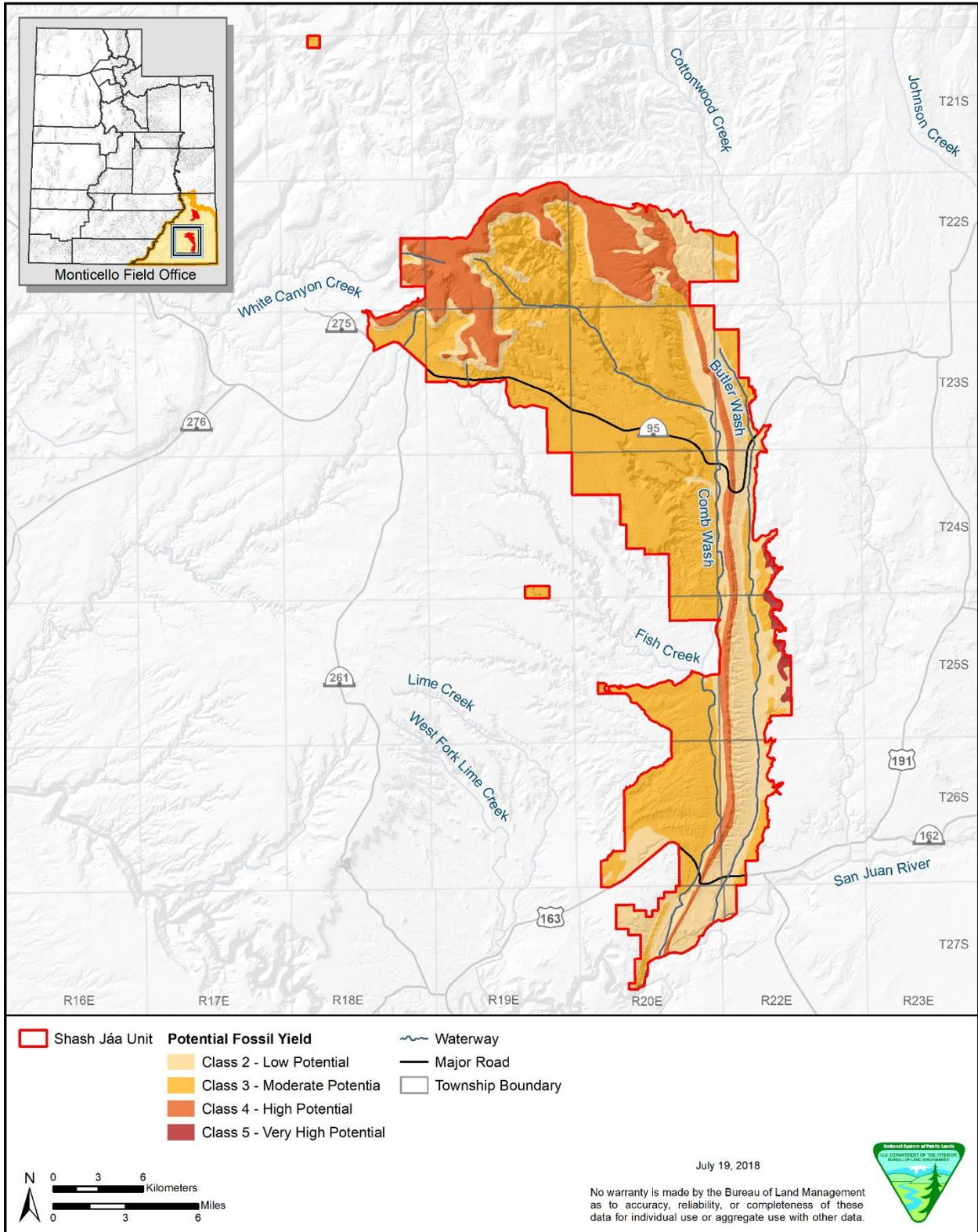


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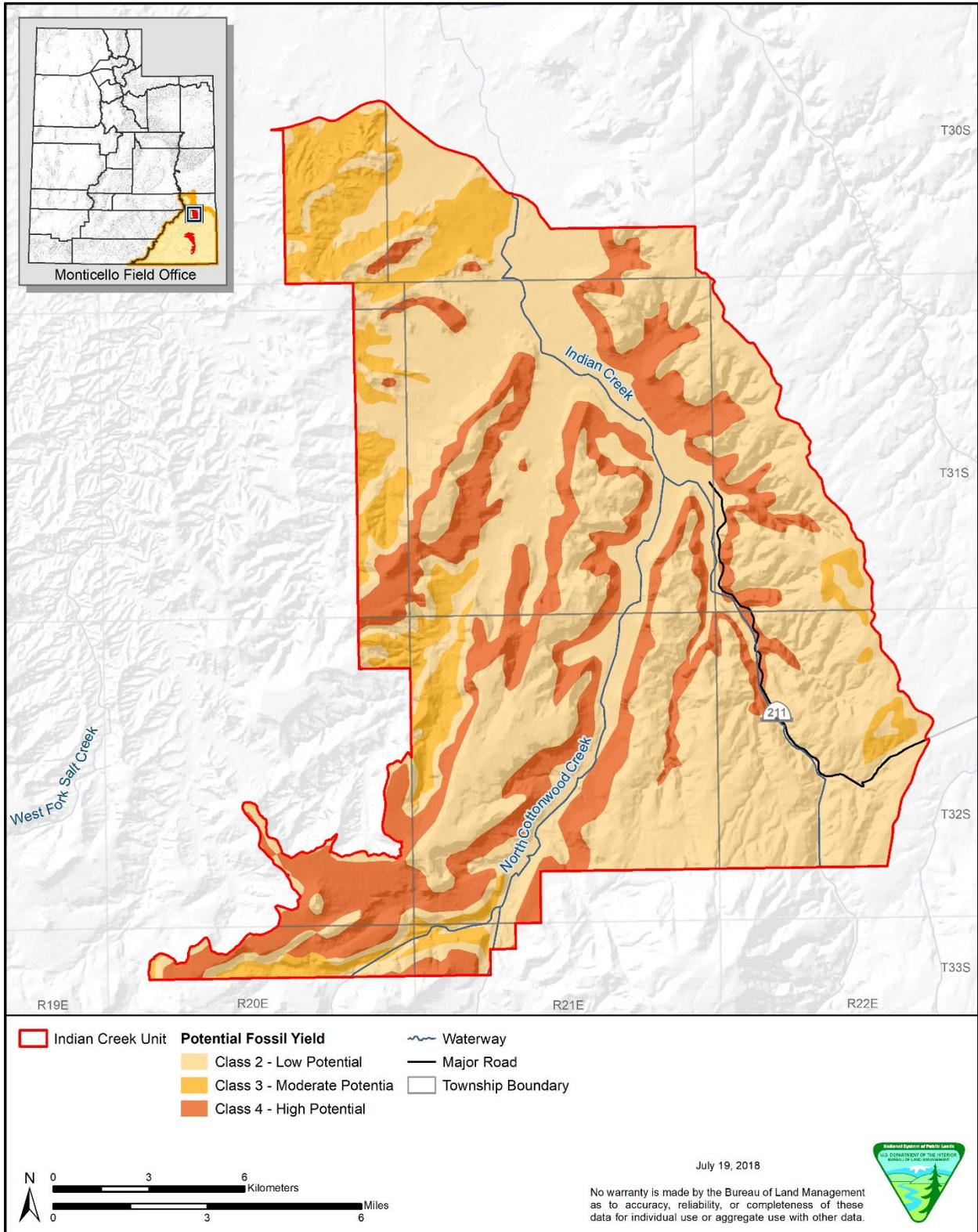
No warranty is made by the Bureau of Land Management as to accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.



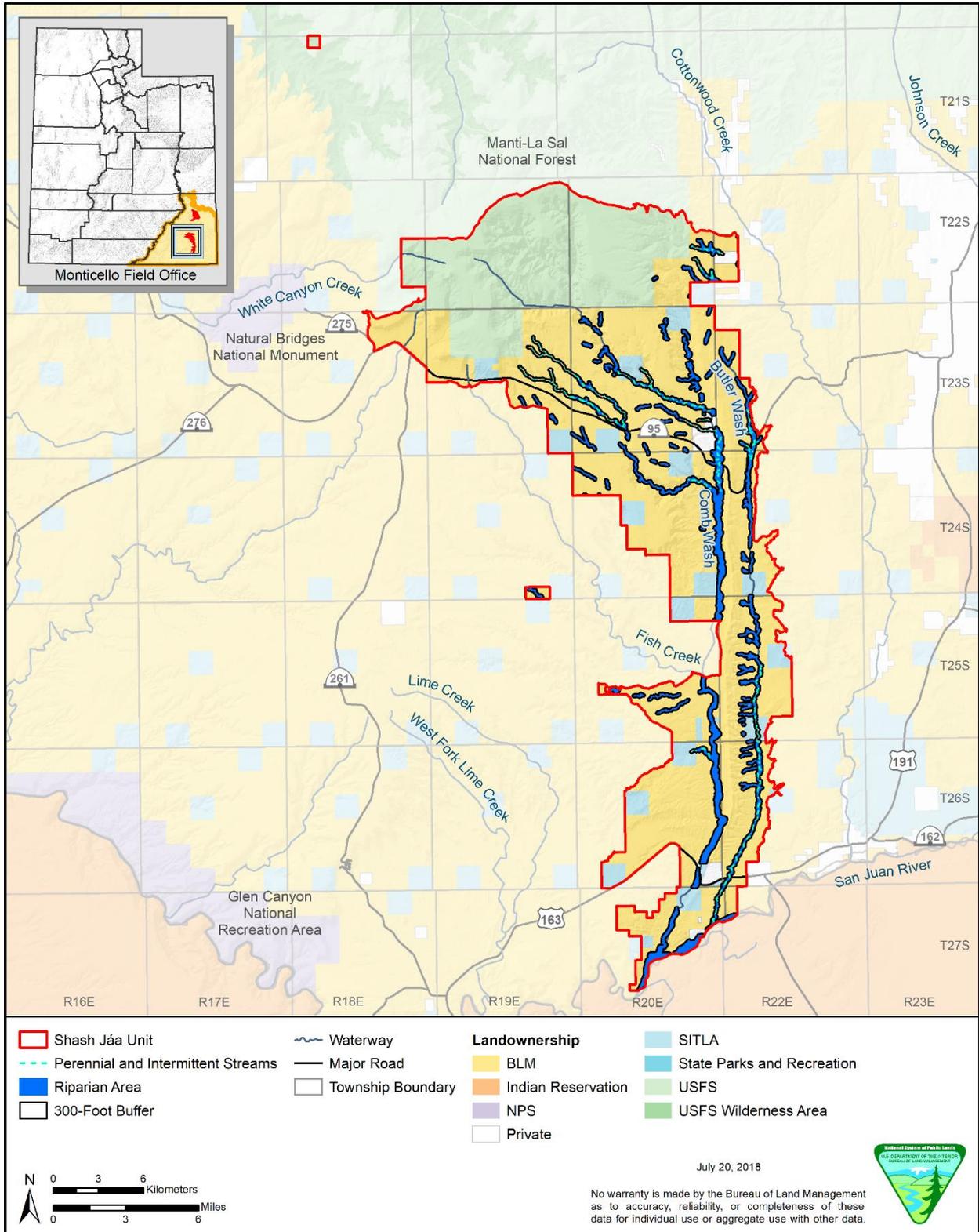
Map PAL-1. Shash Jáa Unit: Potential Fossil Yield Classifications



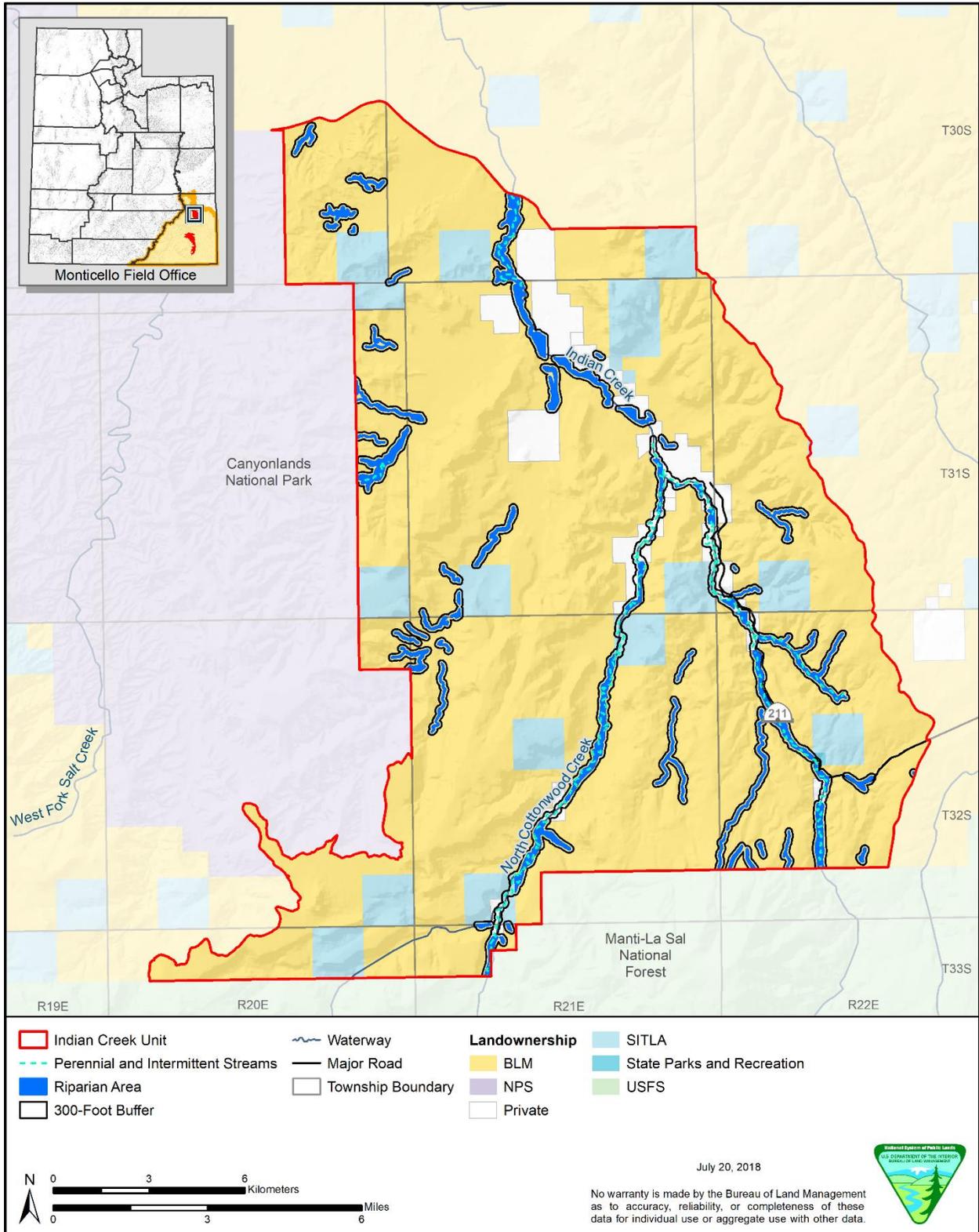
Map PAL-2. Indian Creek Unit: Potential Fossil Yield Classifications



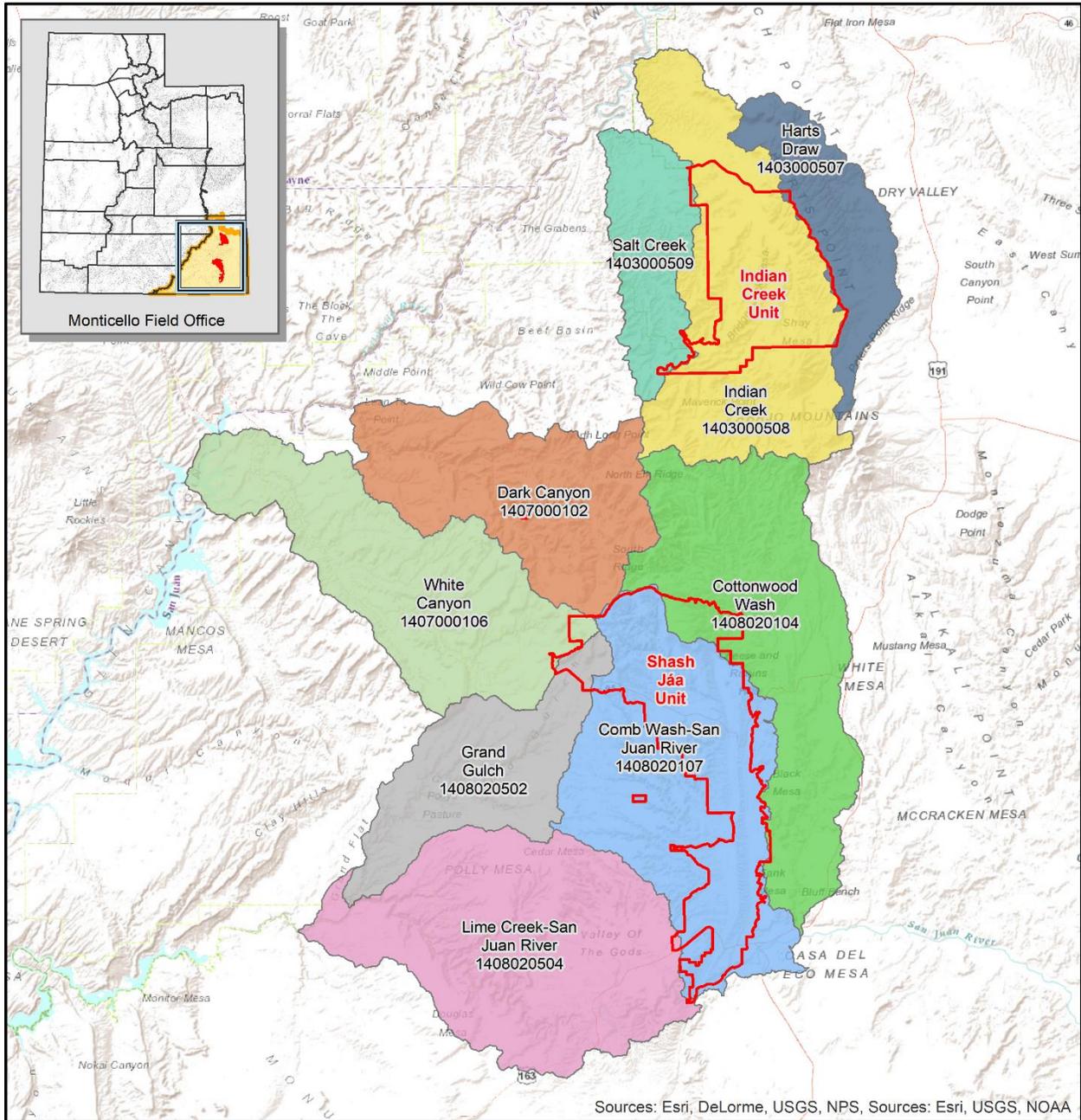
Map RIP-1. Shash Jáa Unit: Riparian Areas, Perennial and Intermittent Streams, and Other Waterways



Map RIP-2. Indian Creek Unit: Riparian Areas, Perennial and Intermittent Streams, and Other Waterways

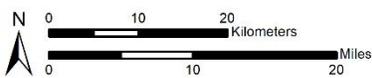


Map RIP-3. HUC10 Watersheds in and near the Planning Area



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

- | | | |
|--------------------------|---------------------------|---------------------------|
| Planning Area | Watersheds (HUC10) | Harts Draw |
| Comb Wash-San Juan River | Indian Creek | Lime Creek-San Juan River |
| Cottonwood Wash | Salt Creek | White Canyon |
| Dark Canyon | Grand Gulch | |

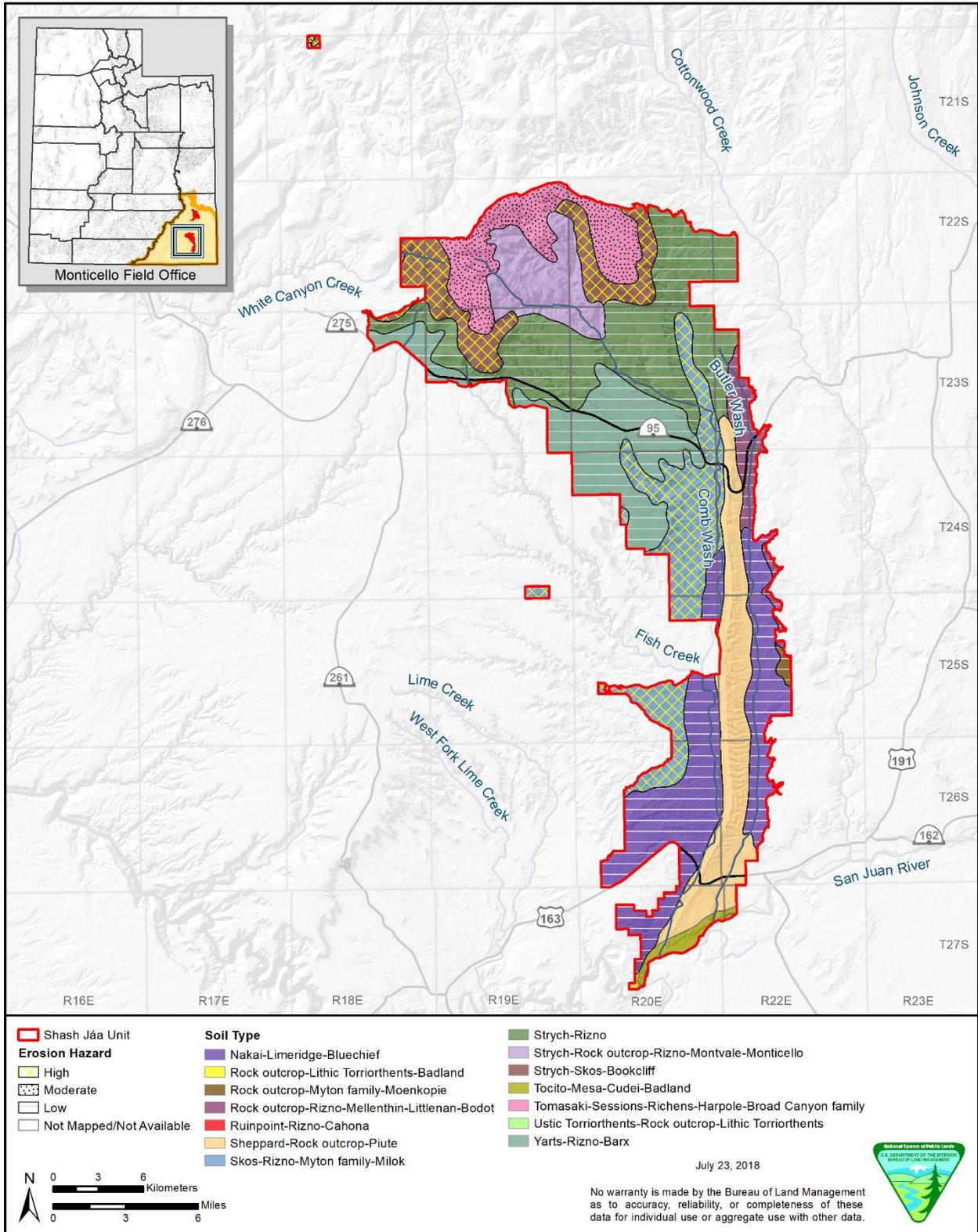


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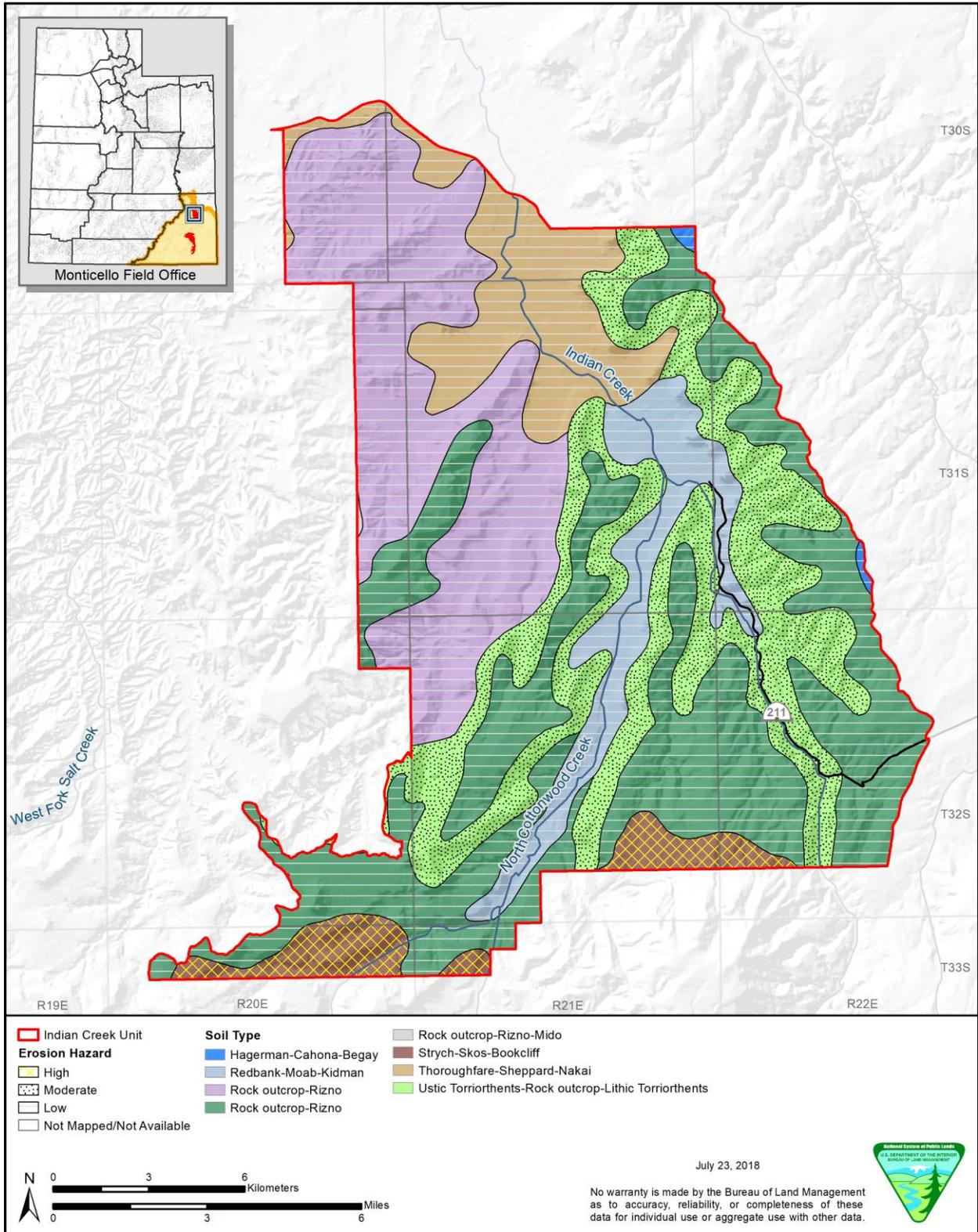
No warranty is made by the Bureau of Land Management as to accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.



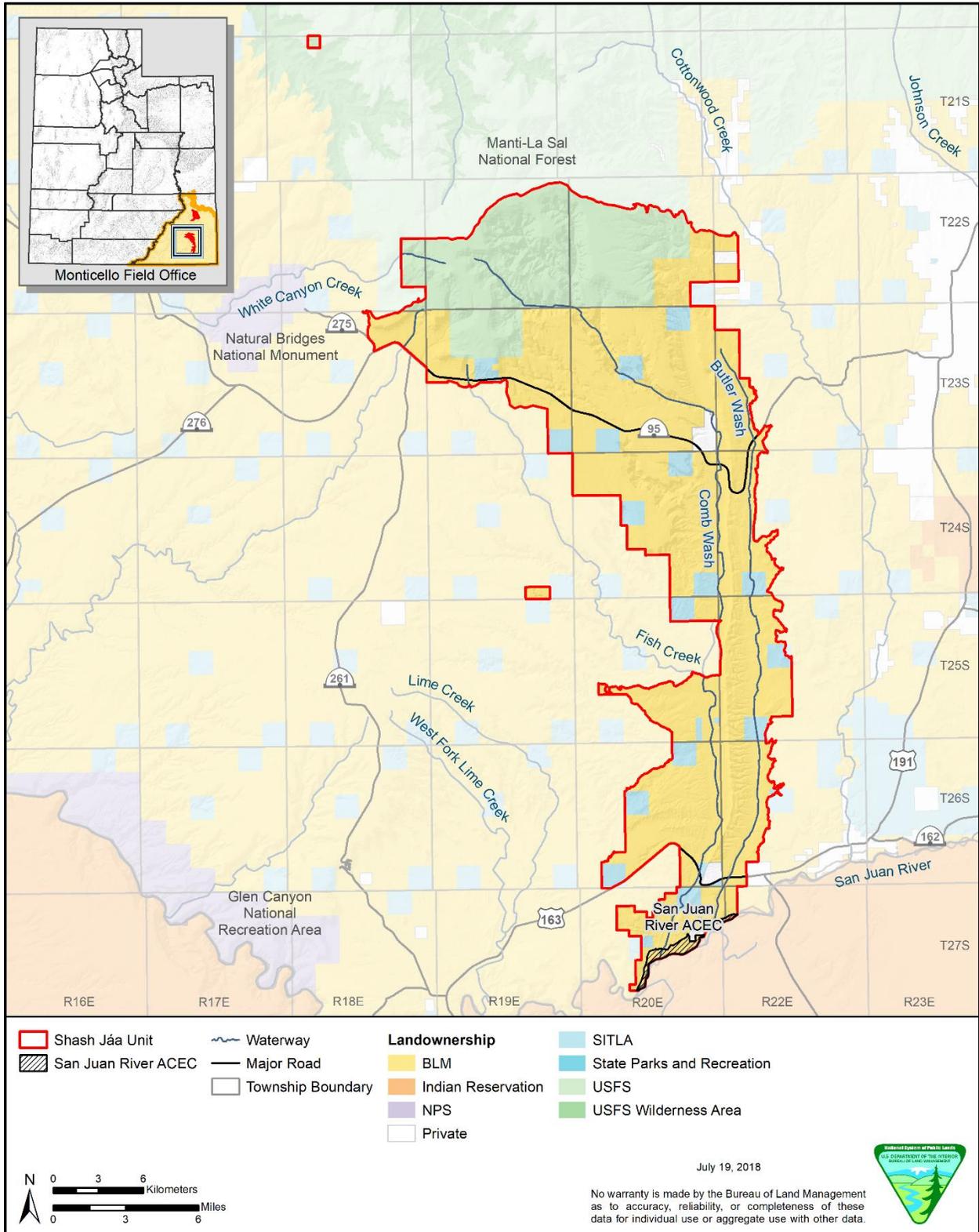
Map SOI-1. Shash Jáa Unit: Water Erosion Hazard Groups and Soil Types



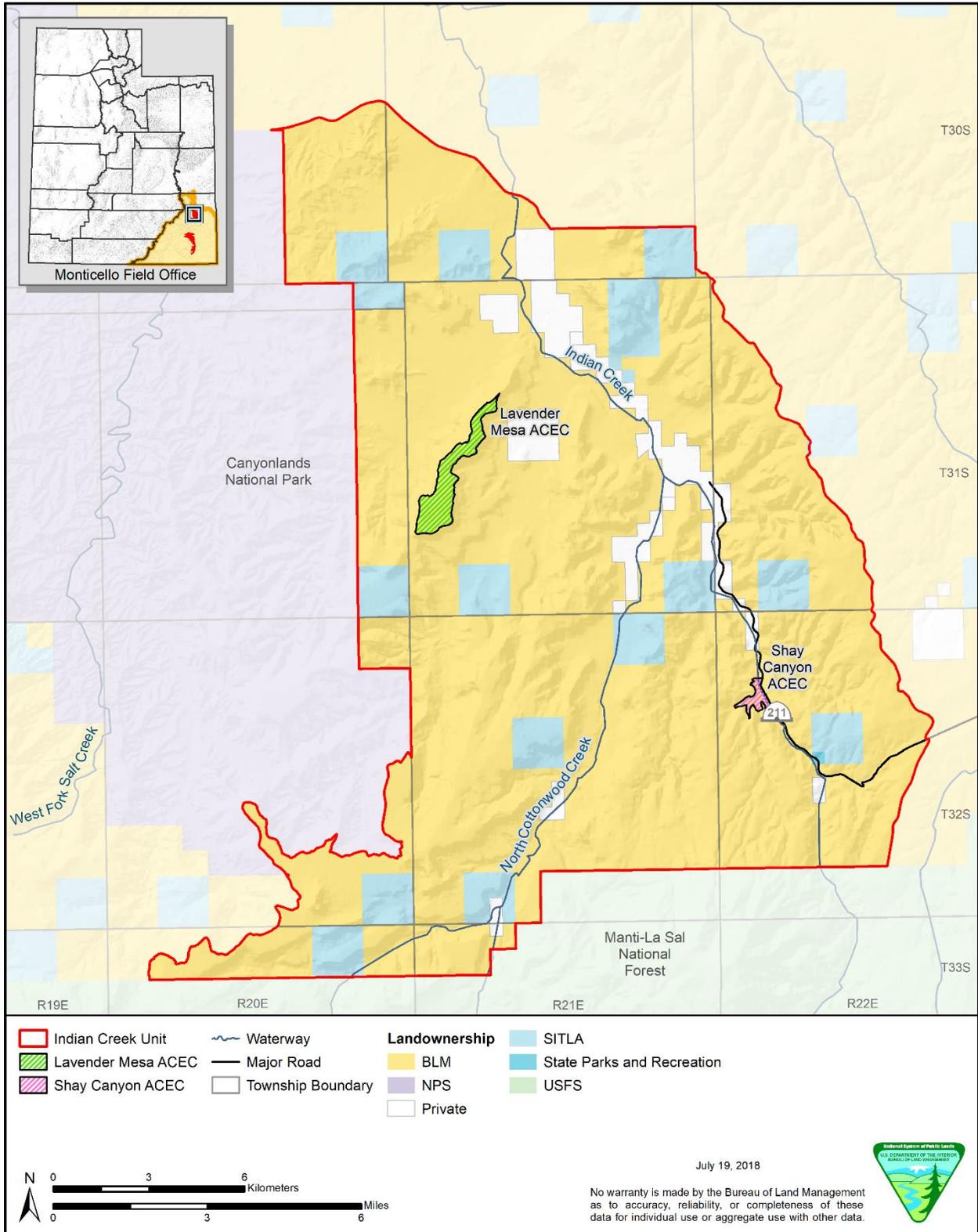
Map SOI-2. Indian Creek Unit: Water Erosion Hazard Groups and Soil Types



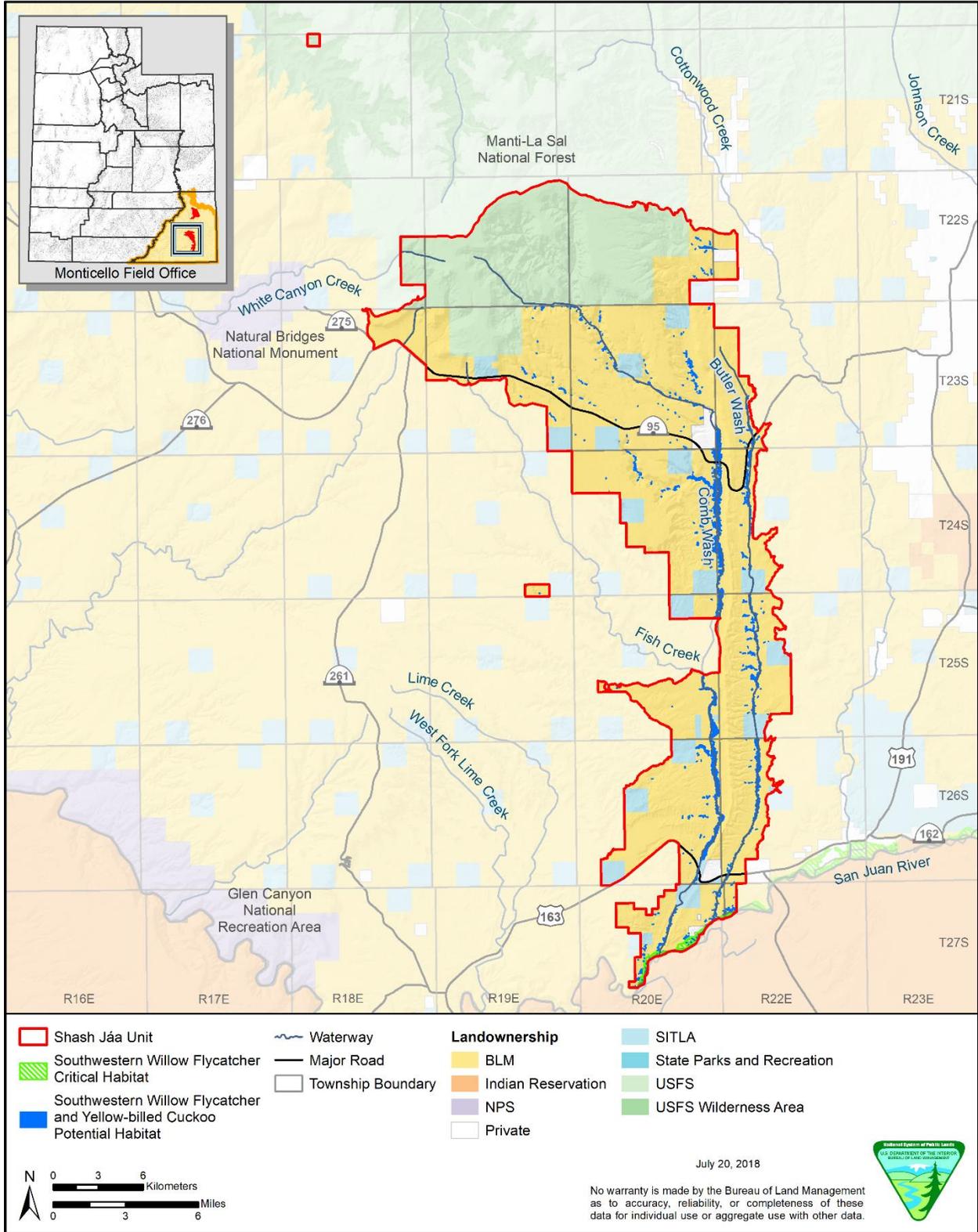
Map ACEC-1. Shash Jáa Unit: Areas of Environmental Concern



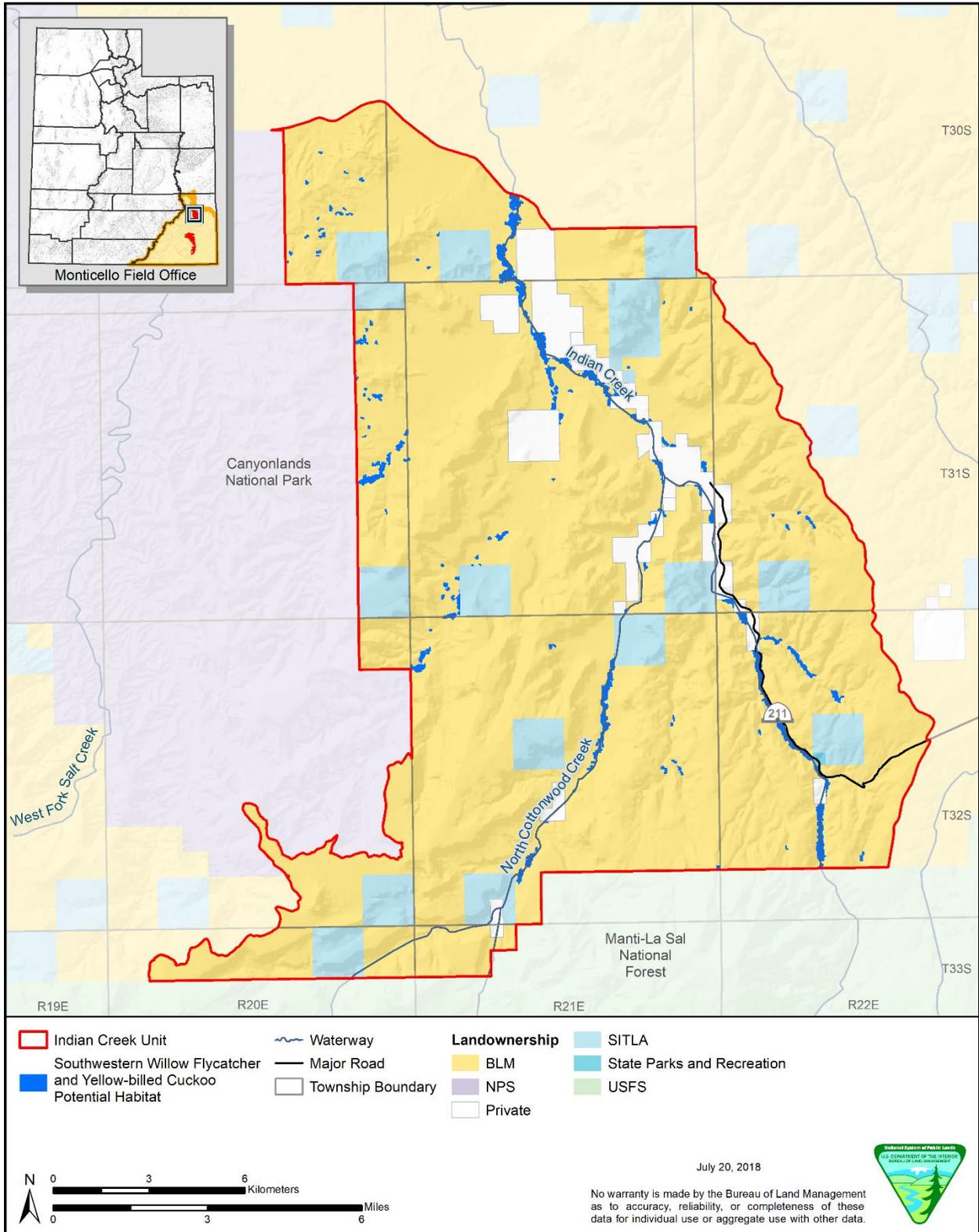
Map ACEC-2. Indian Creek Unit: Areas of Environmental Concern



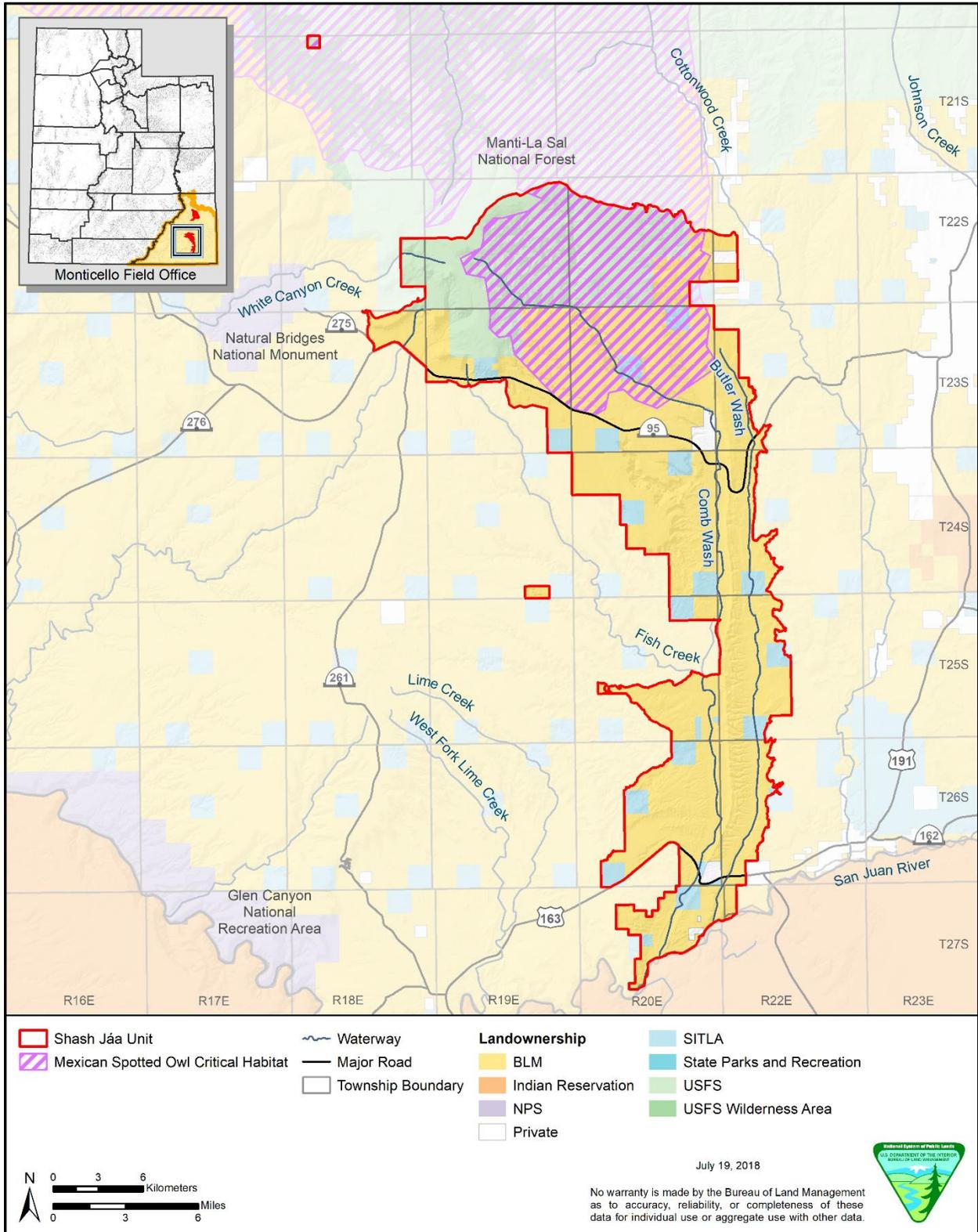
Map SSS-1. Shash Jaa Unit: Southwestern Willow Flycatcher and Yellow-billed Cuckoo Potential Habitat and Designated Critical Habitat



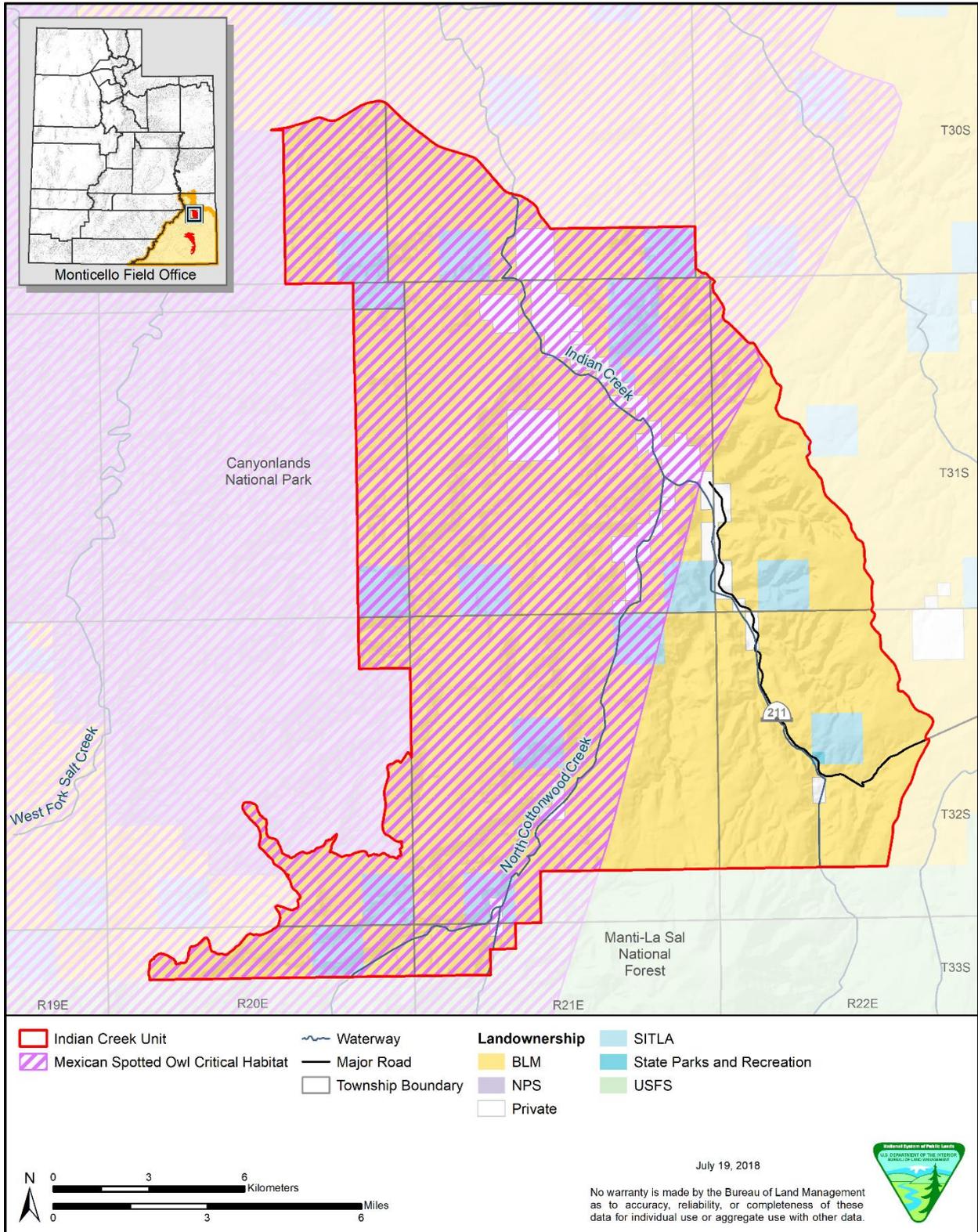
Map SSS-2. Indian Creek Unit: Southwestern Willow Flycatcher and Yellow-billed Cuckoo Potential Habitat



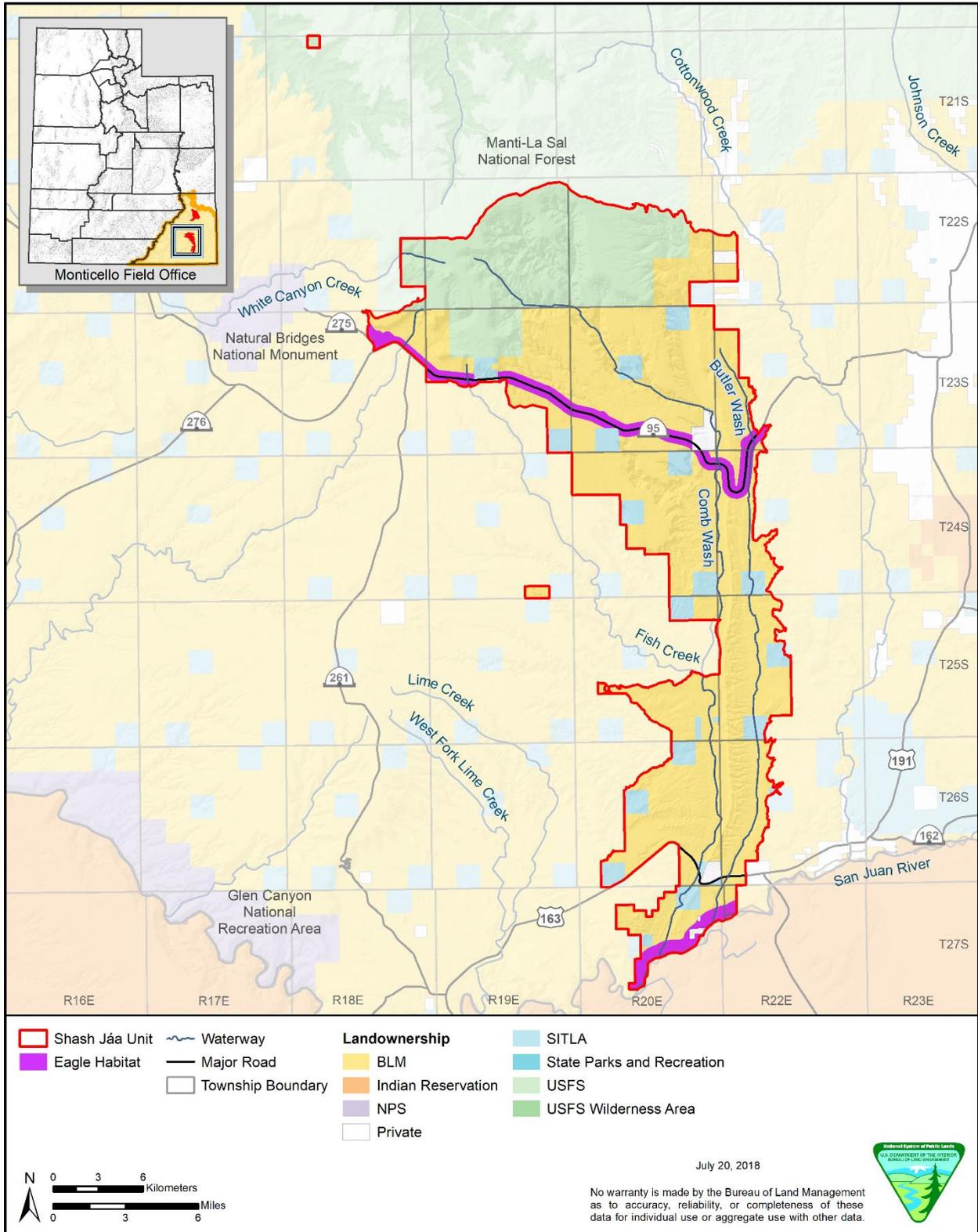
Map SSS-3. Shash Jáa Unit: Mexican Spotted Owl Critical Habitat



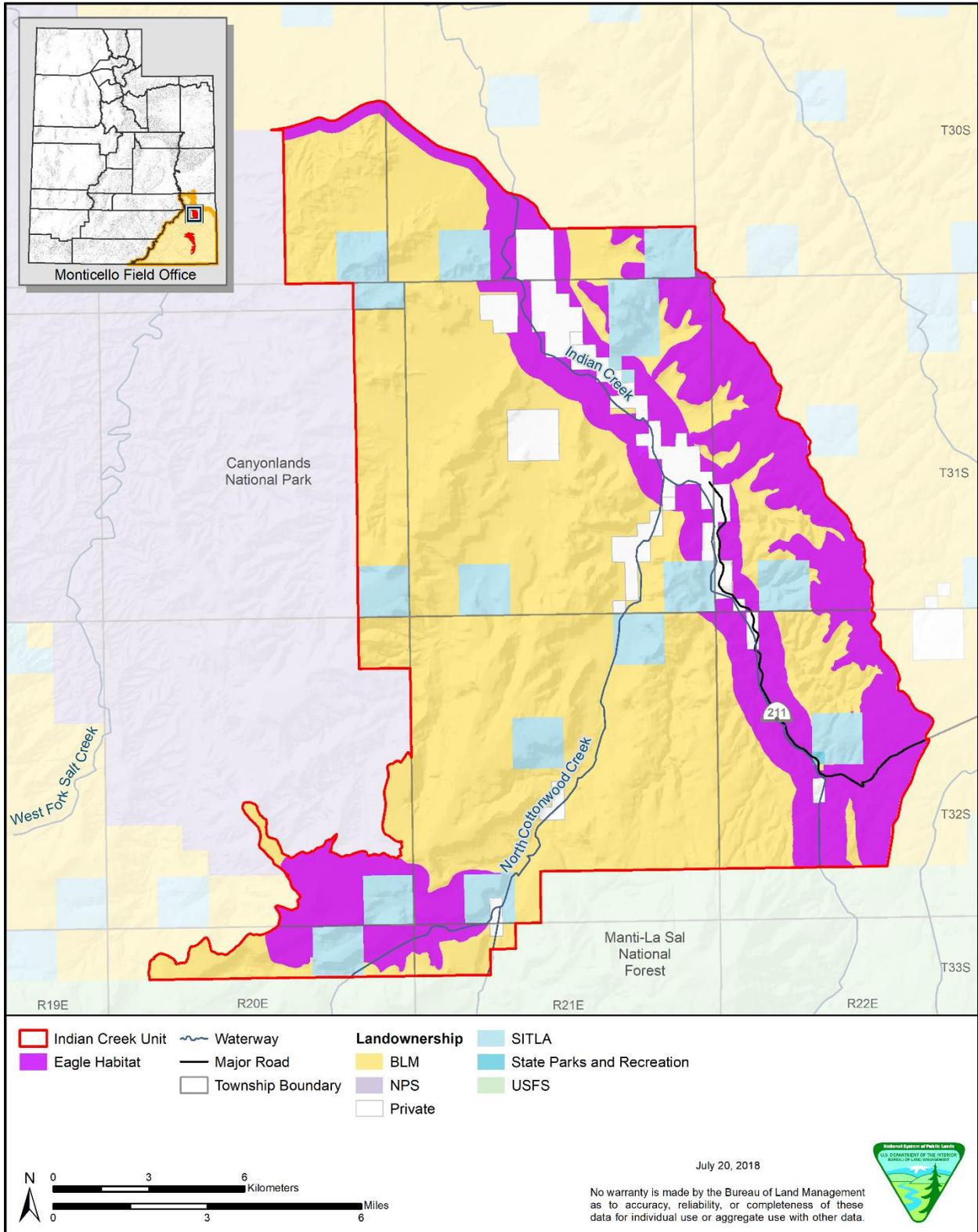
Map SSS-4. Indian Creek Unit: Mexican Spotted Owl Critical Habitat



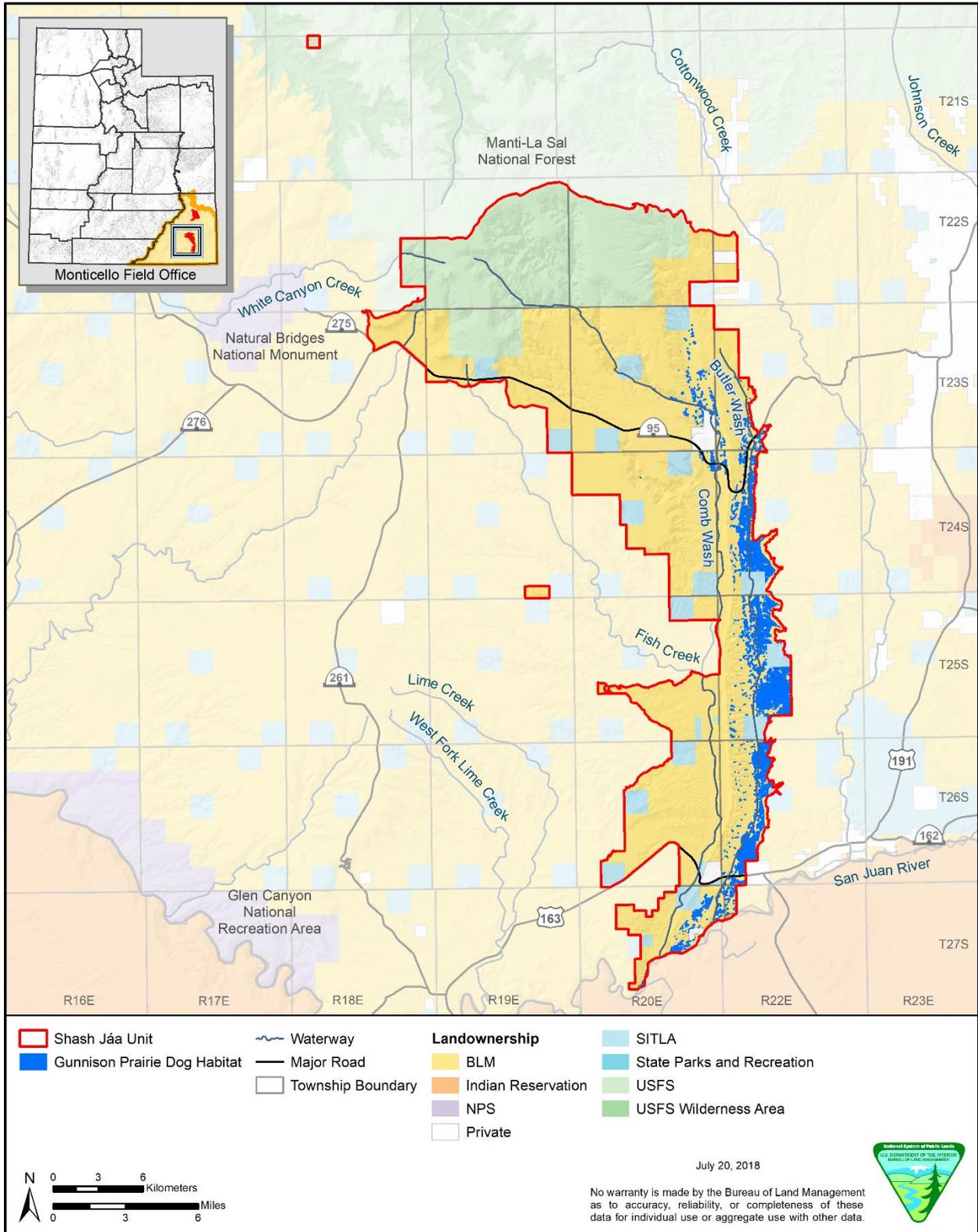
Map SSS-5. Shash Jáa Unit: Bald Eagle Habitat



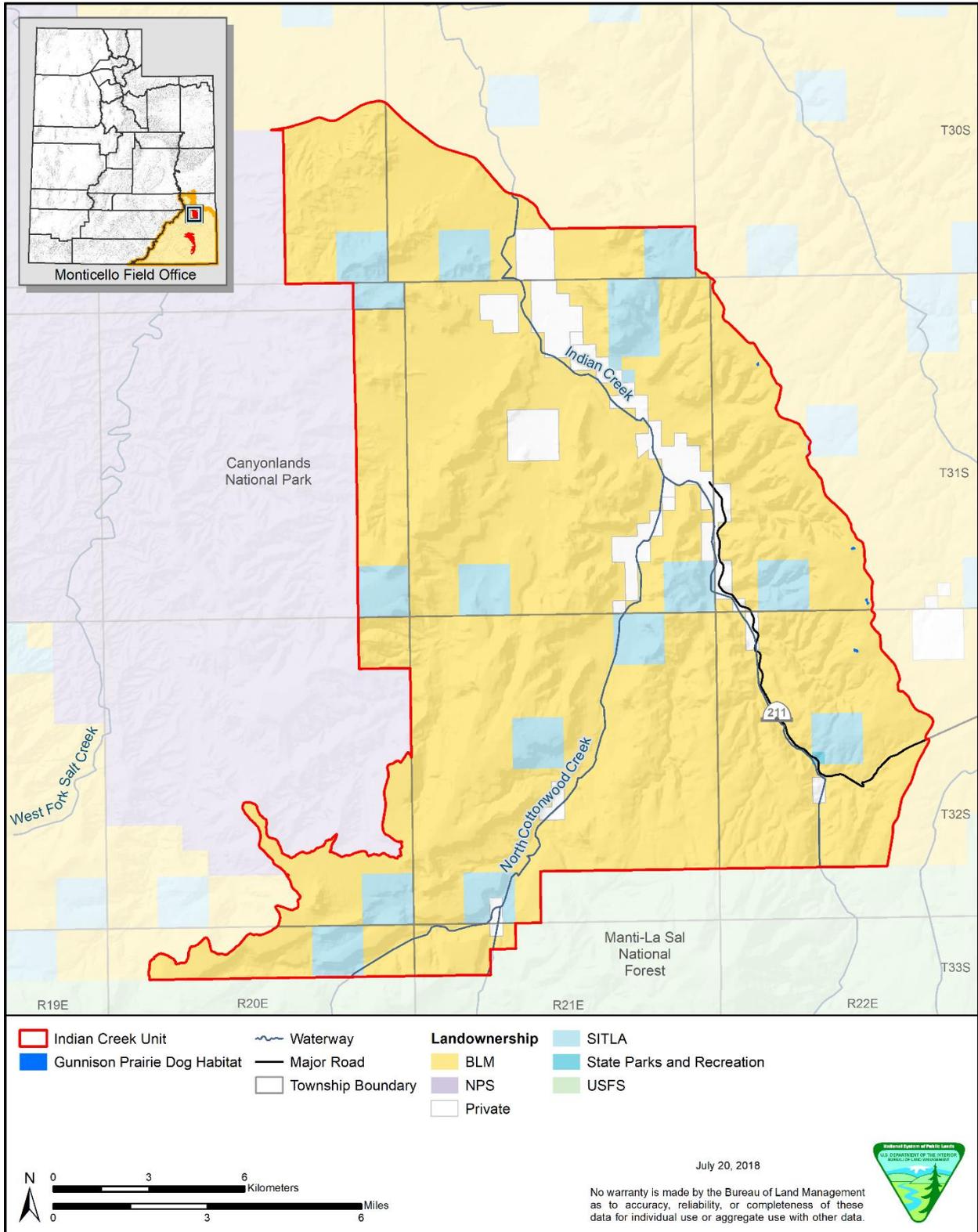
Map SSS-6. Indian Creek Unit: Bald Eagle Habitat



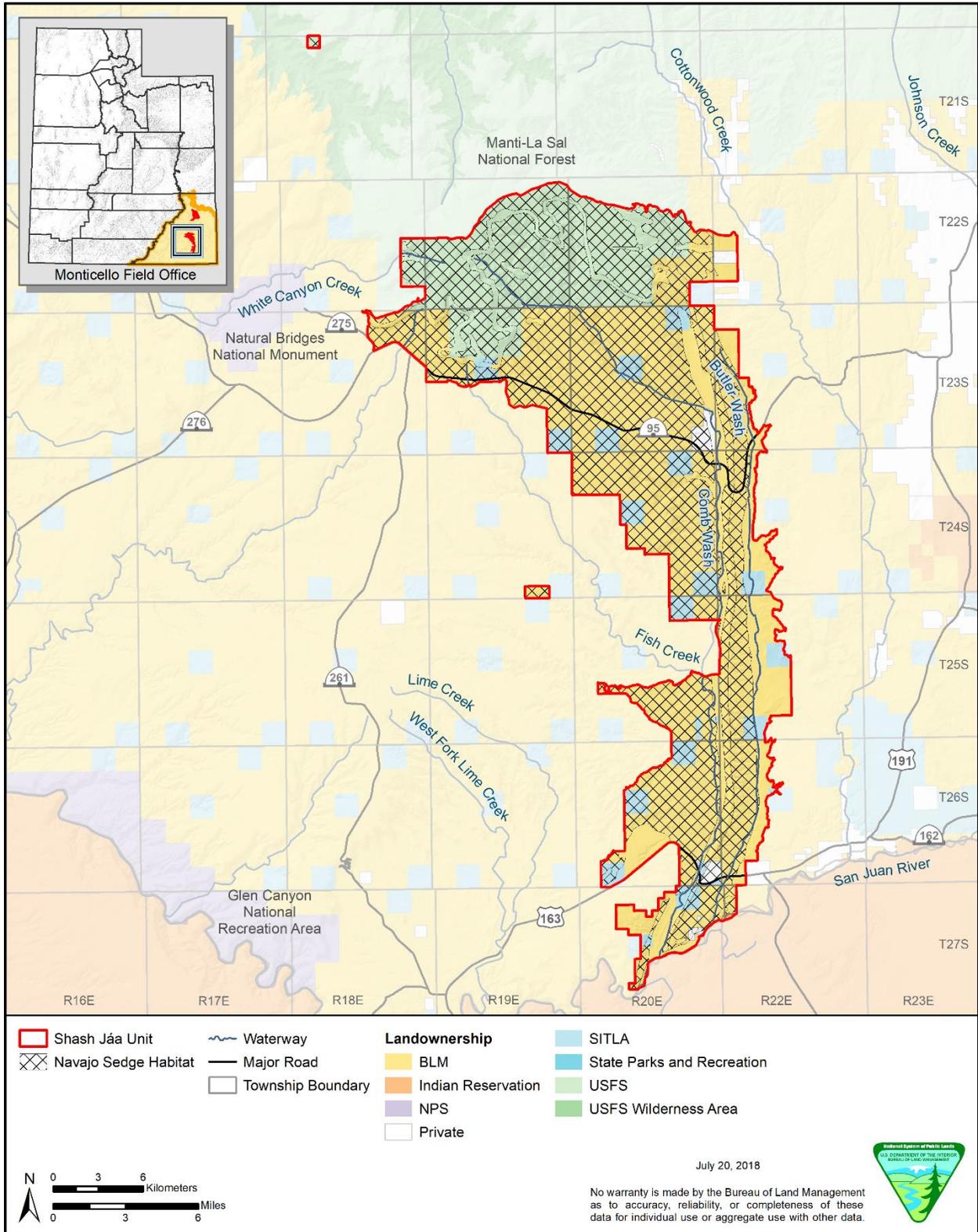
Map SSS-7. Shash Jáa Unit: Gunnison Prairie Dog Habitat



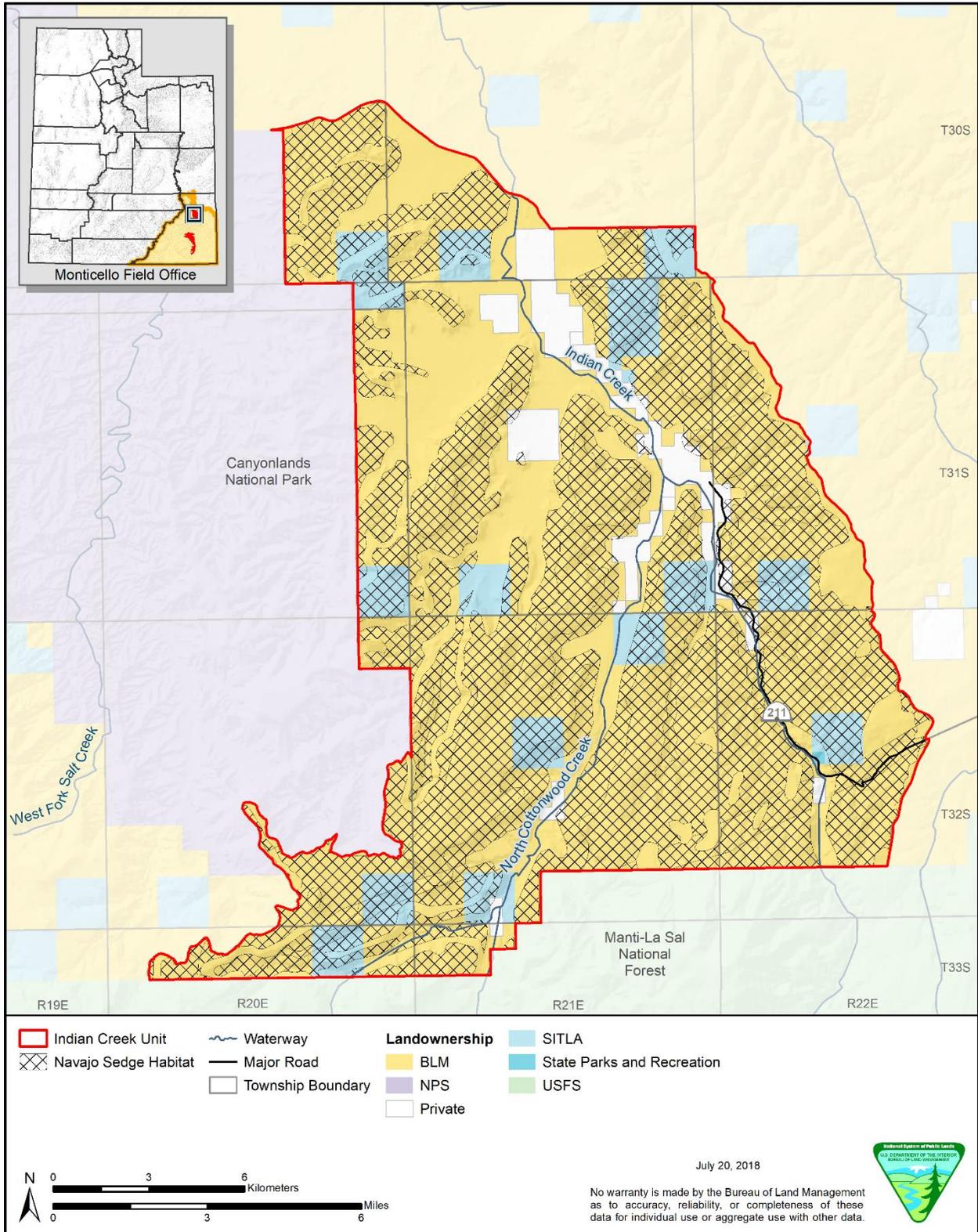
Map SSS-8. Indian Creek Unit: Gunnison Prairie Dog Habitat



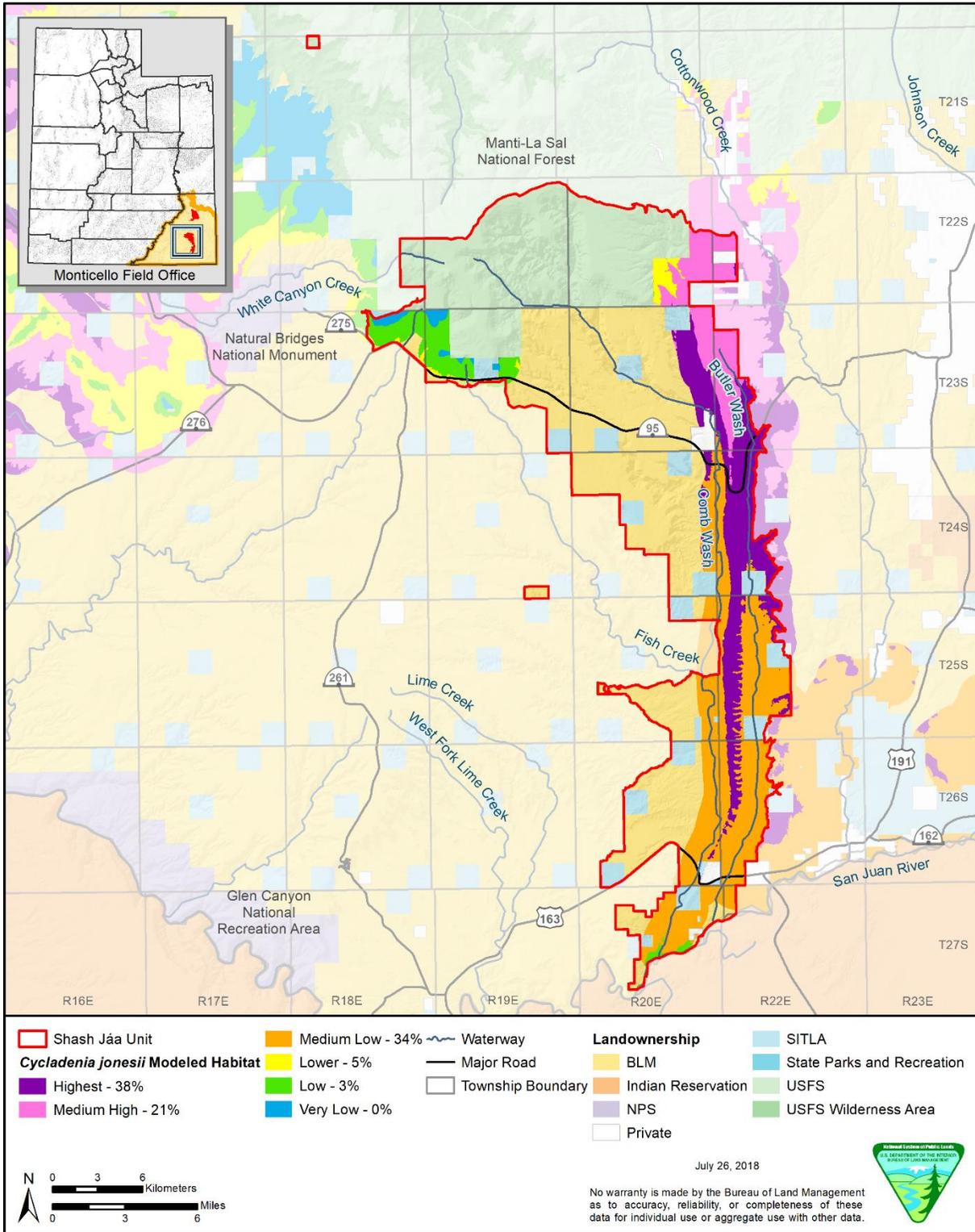
Map SSS-9. Shash Jáa Unit: Navajo Sedge Habitat



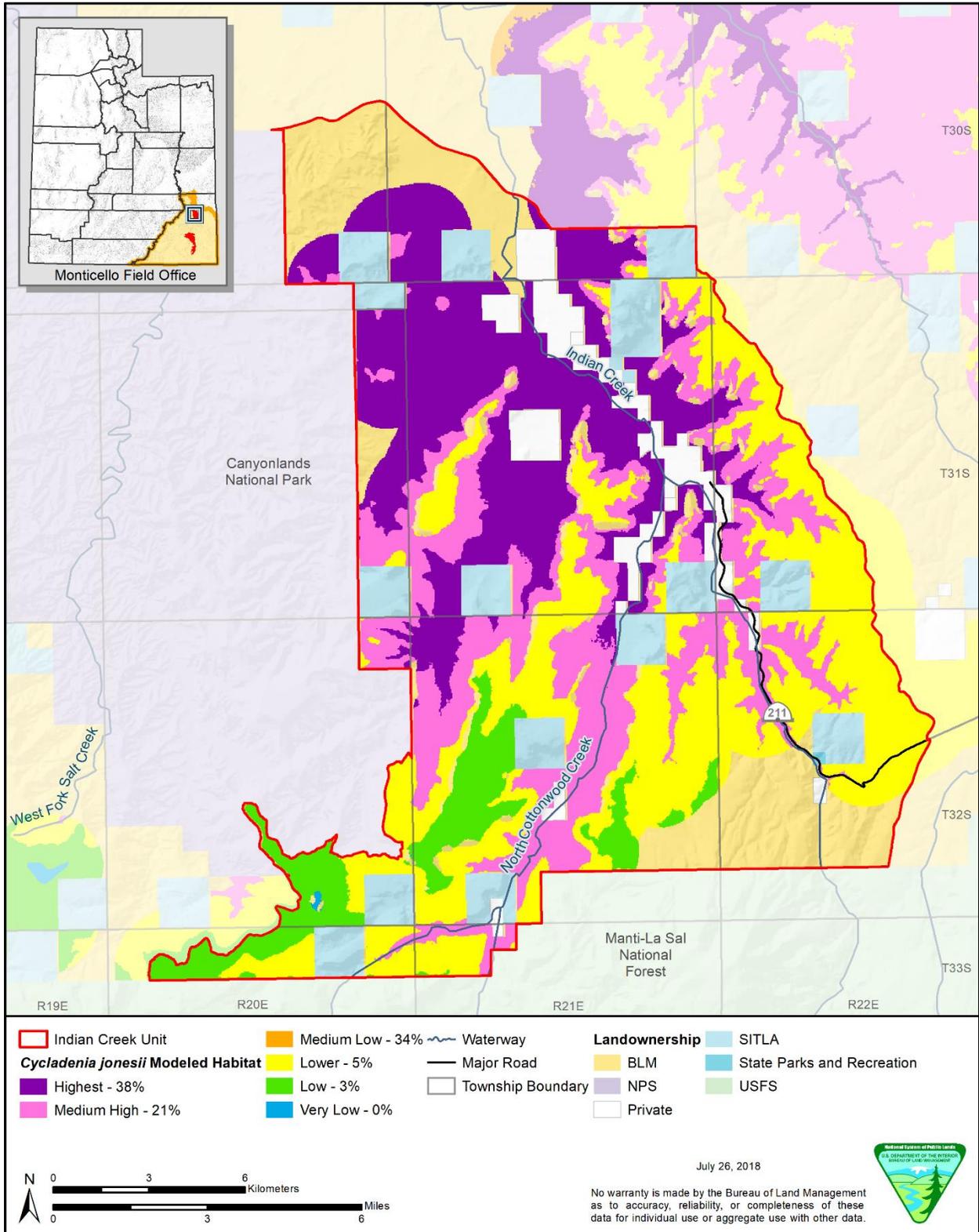
Map SSS-10. Indian Creek Unit: Navajo Sedge Habitat



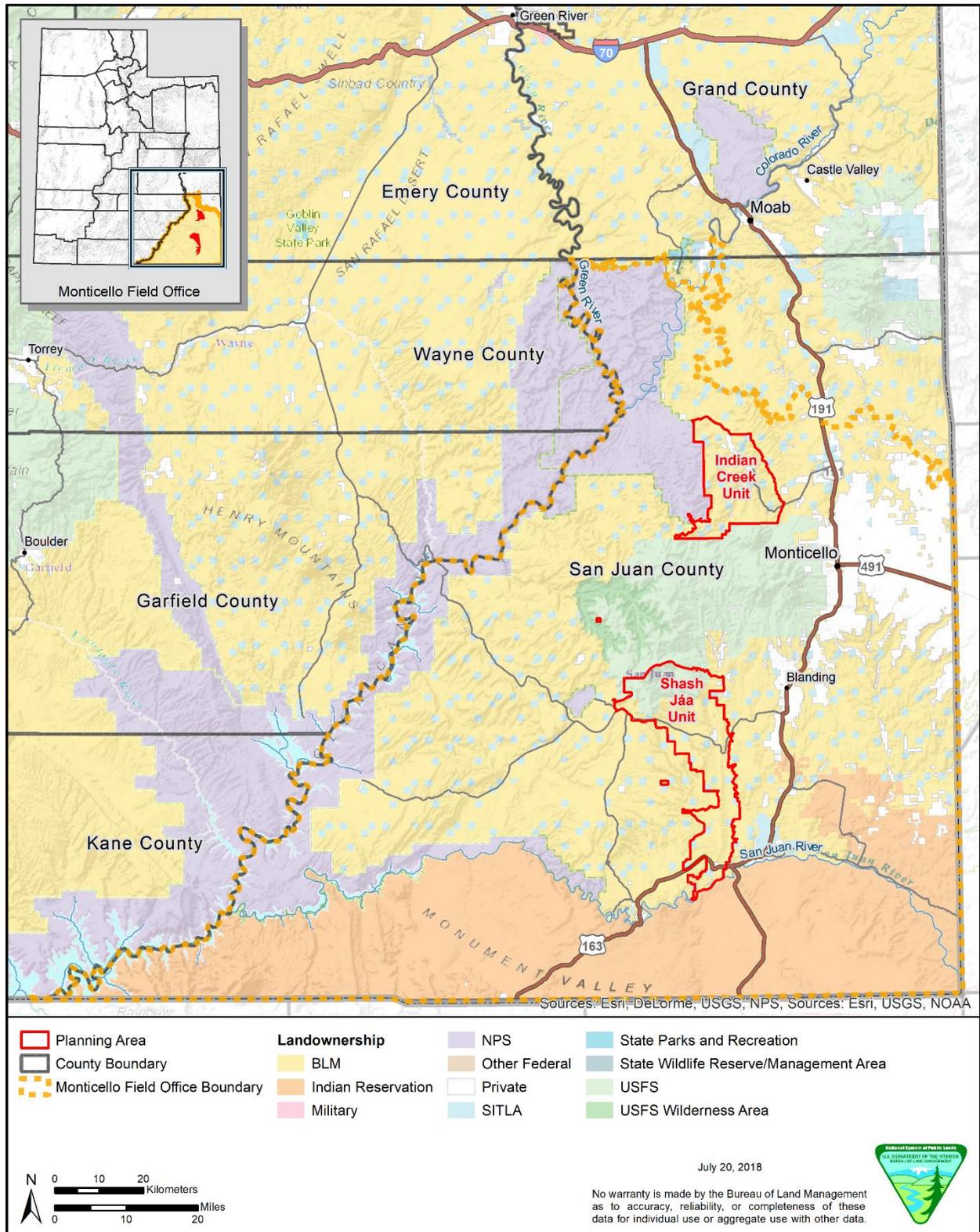
Map SSS-11. Shash Jáa Unit: Jones Cycladenia Modeled Habitat



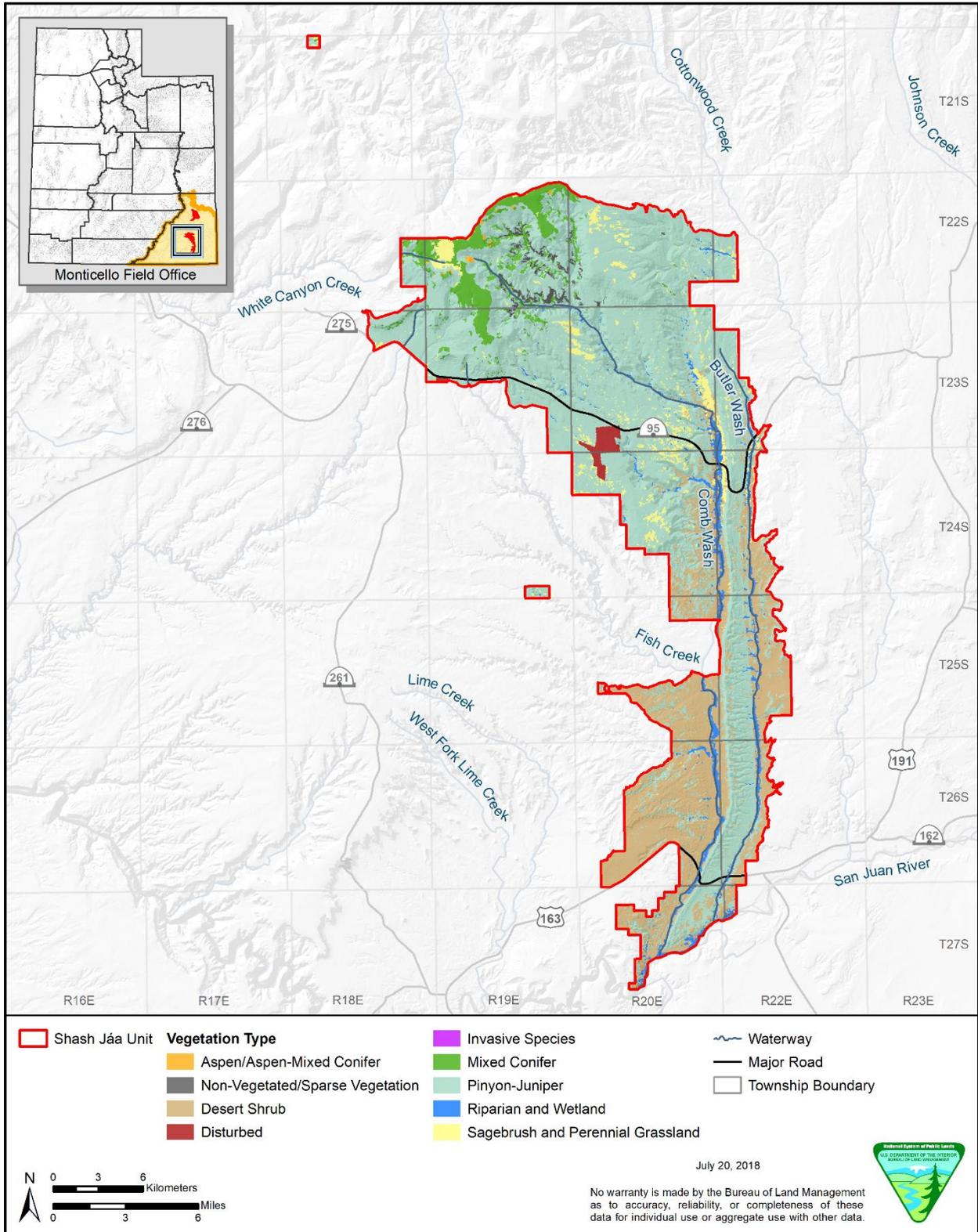
Map SSS-12. Indian Creek: Jones Cycladenia Modeled Habitat



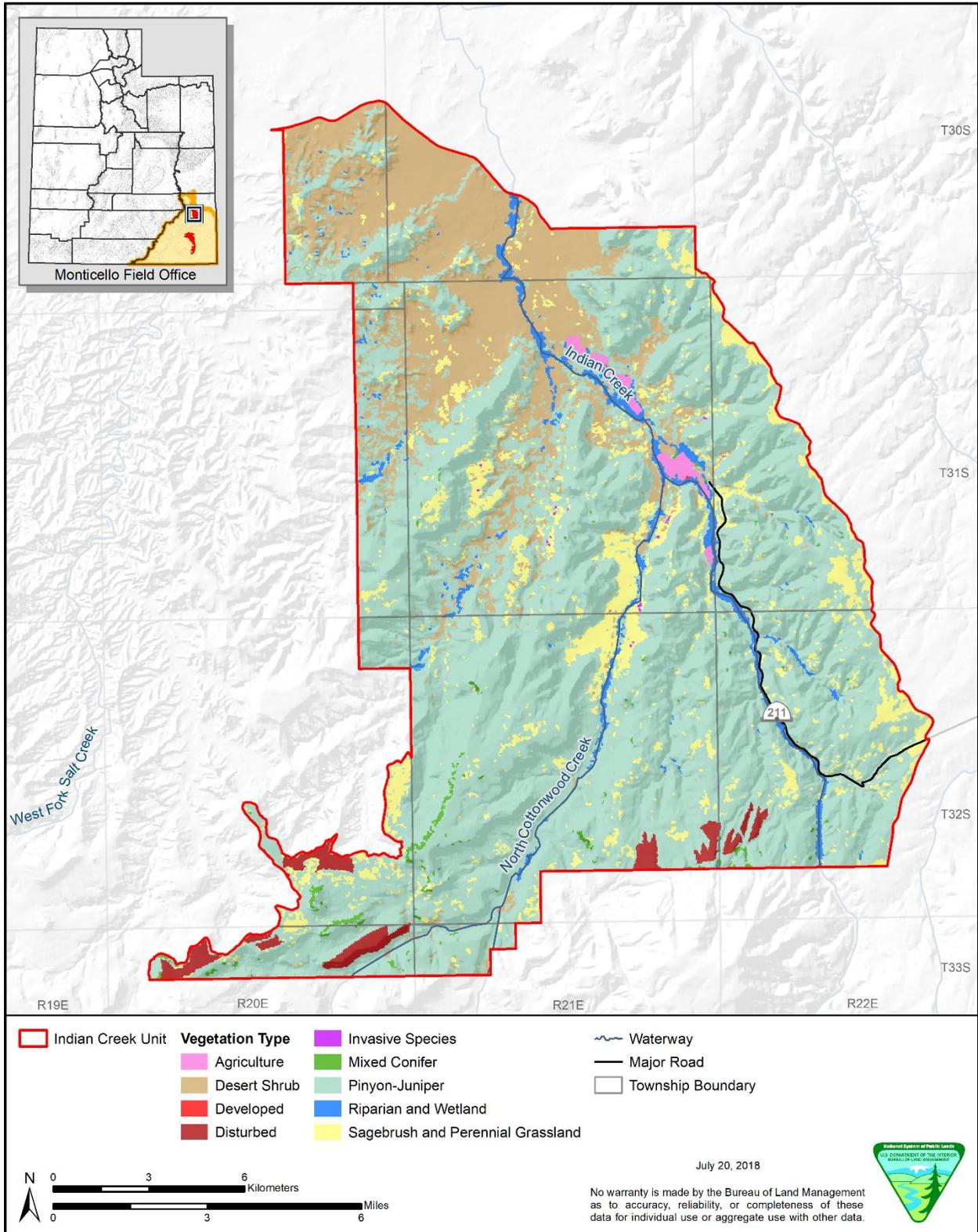
Map SOC-1. Socioeconomics Analysis Area (San Juan County) and the Planning Area



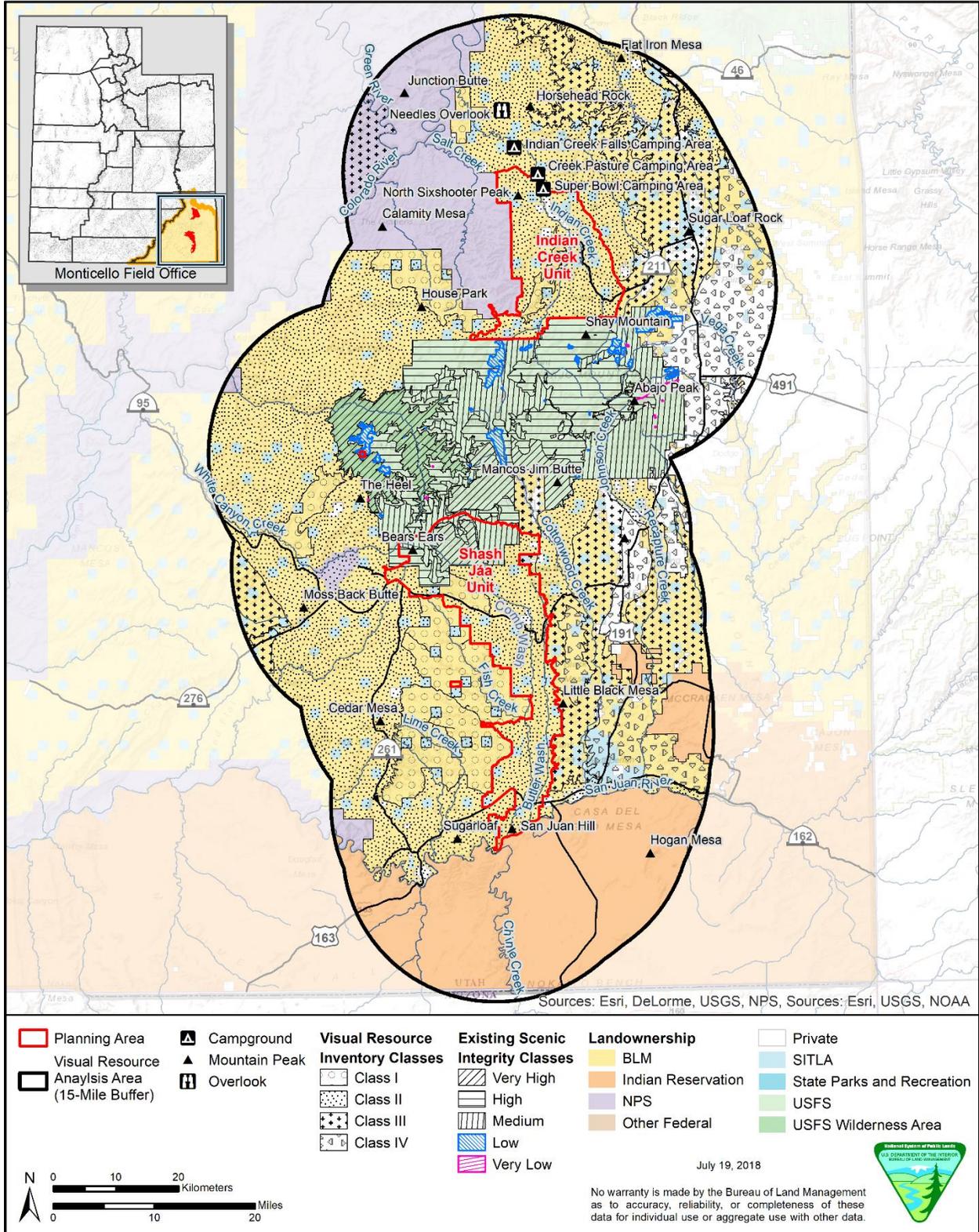
Map VEG-1. Shash Jáa Unit: Vegetation Types



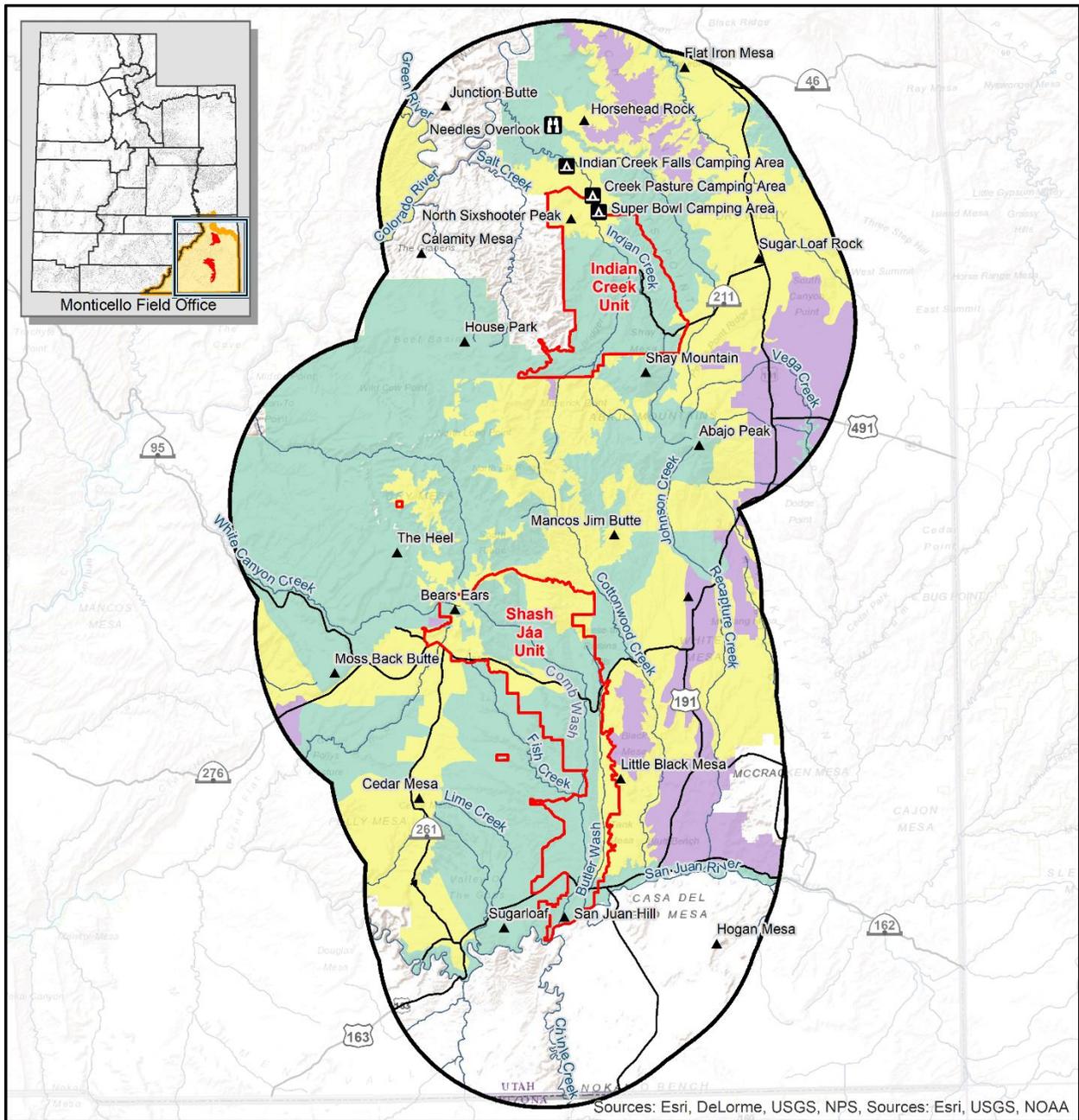
Map VEG-2. Indian Creek Unit: Vegetation Types



Map VRM-1. Visual Resource Inventory Classes and Existing Scenic Integrity in the Visual Resource Analysis Area



Map VRM-2. Scenic Quality/Scenic Attractiveness Ratings in the Visual Resource Analysis Area



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

- | | | |
|--|---------------|-----------------------------------|
| Planning Area | Campground | BLM Scenic Quality Rating/ |
| Visual Resource Analysis Area (15-Mile Buffer) | Mountain Peak | USFS Scenic Attractiveness |
| | Overlook | A |
| | | B |
| | | C |
| | | Not Inventoried |

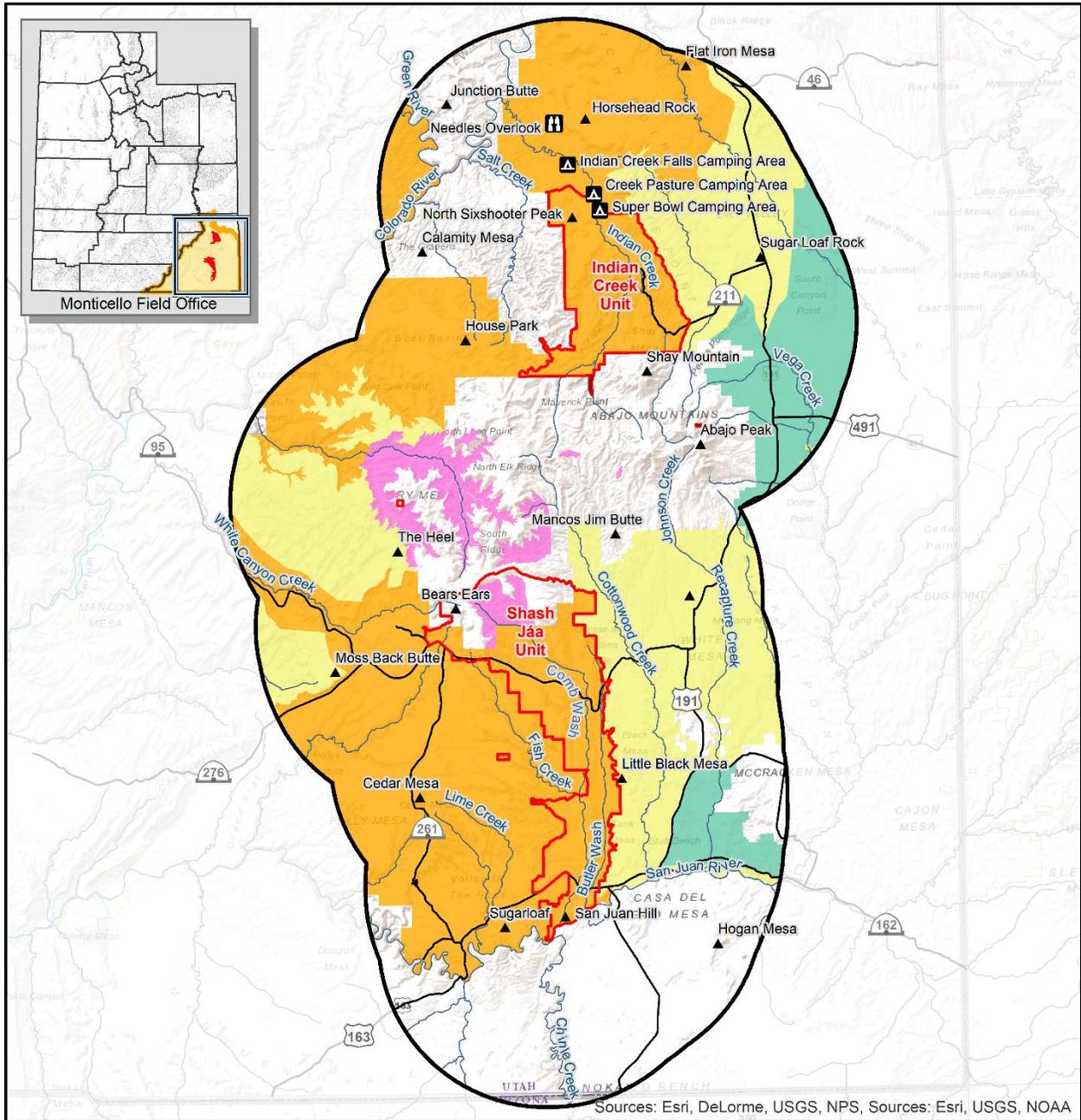


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Map VRM-3. Sensitivity Levels and User Concern Ratings in the Visual Resource Analysis Area



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

- | | | | |
|--------------------------------|---------------|-------------------------------|---------------------------------|
| Planning Area | Campground | BLM Sensitivity Levels | USFS User Concern Rating |
| Visual Resource | Mountain Peak | High | Level I |
| Analysis Area (15-Mile Buffer) | Overlook | Moderate | Level II |
| | | Low | |
| | | Not Inventoried | |

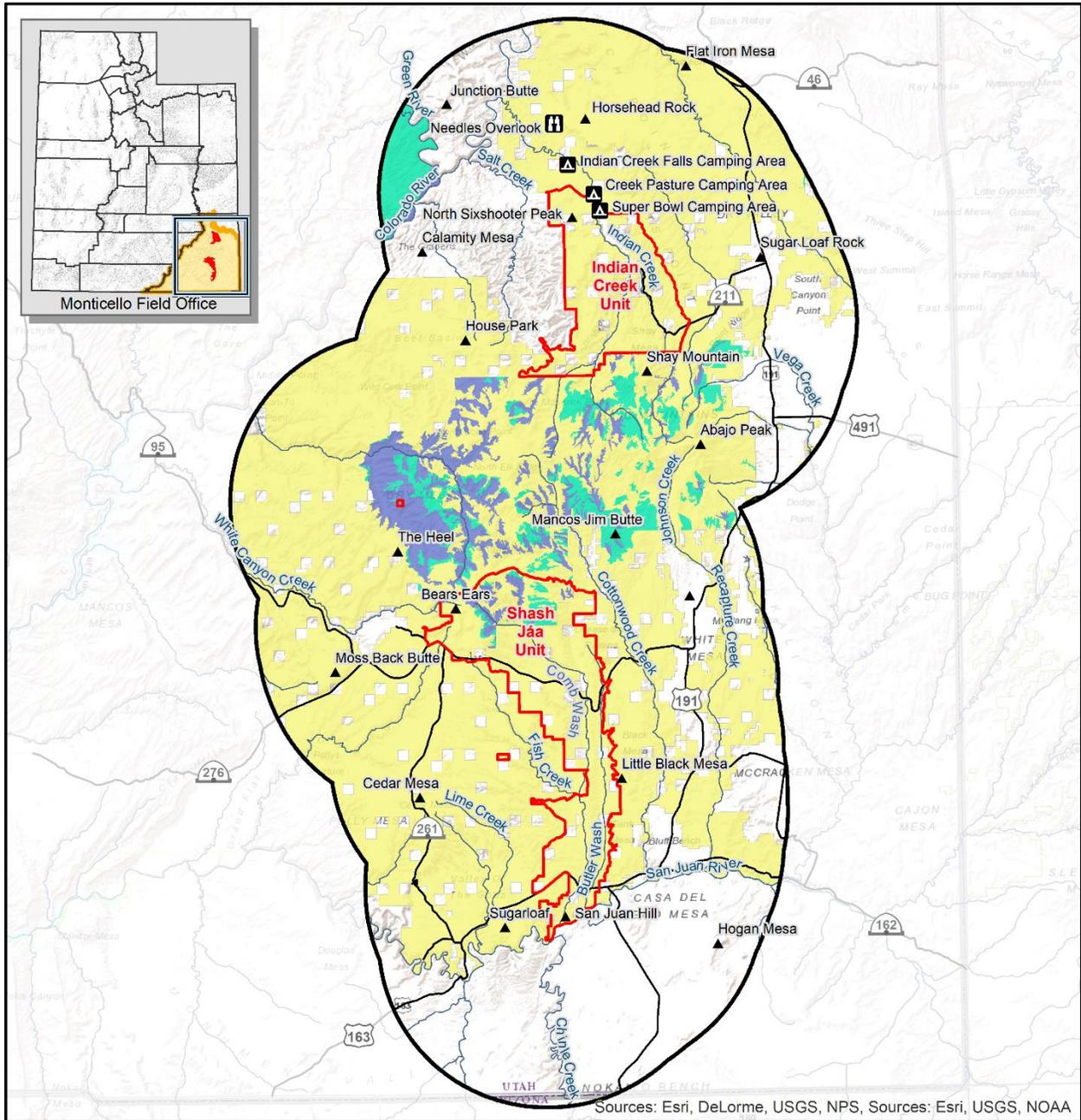


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Map VRM-4. Distance Zones in the Visual Resource Analysis Area



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

- | | | |
|--------------------------------|---------------|------------------------------------|
| Planning Area | Campground | BLM and USFS Distance Zones |
| Visual Resource | Mountain Peak | Foreground-Midground |
| Analysis Area (15-Mile Buffer) | Overlook | Background |
| | | Seldom Seen |
| | | Not mapped |

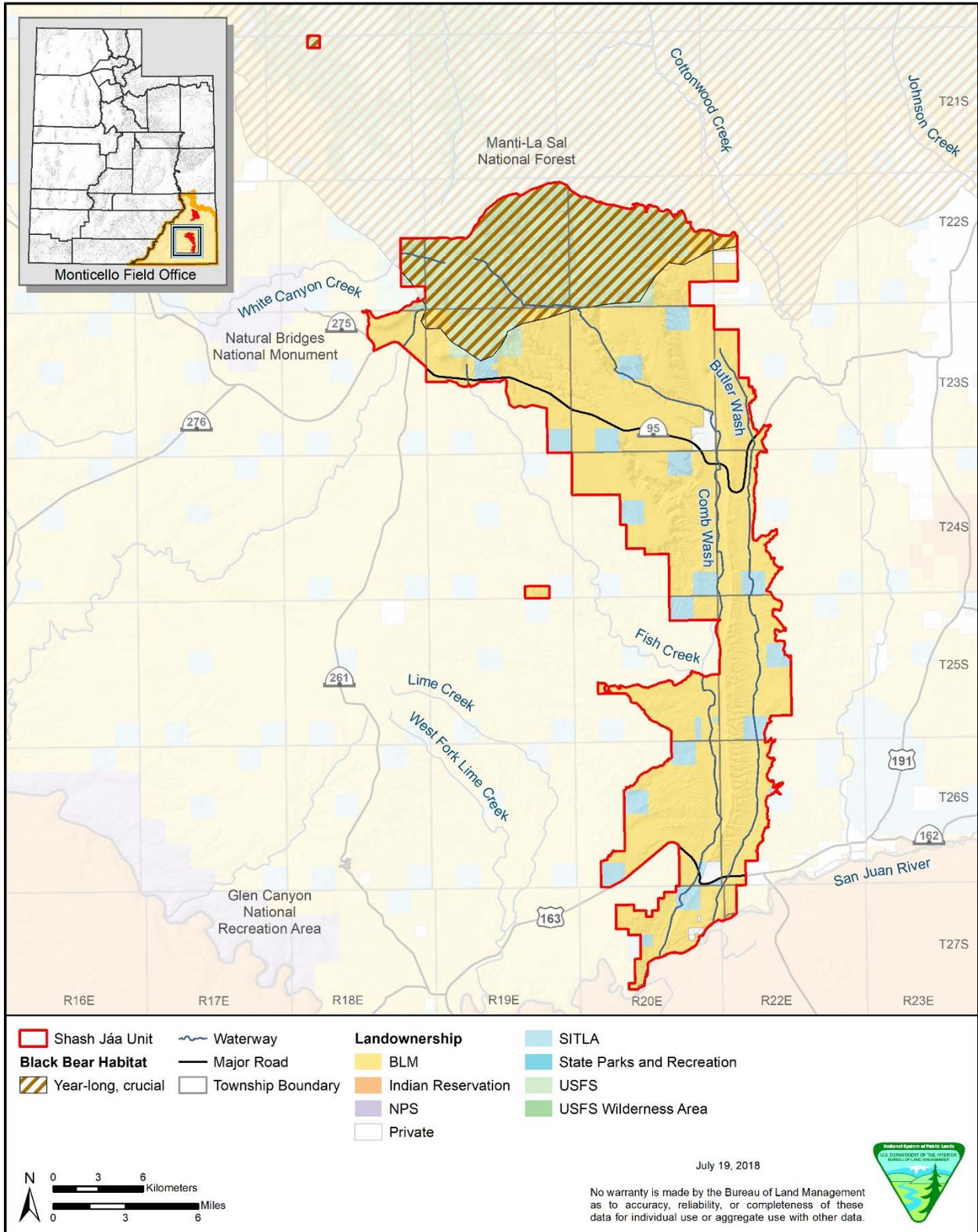


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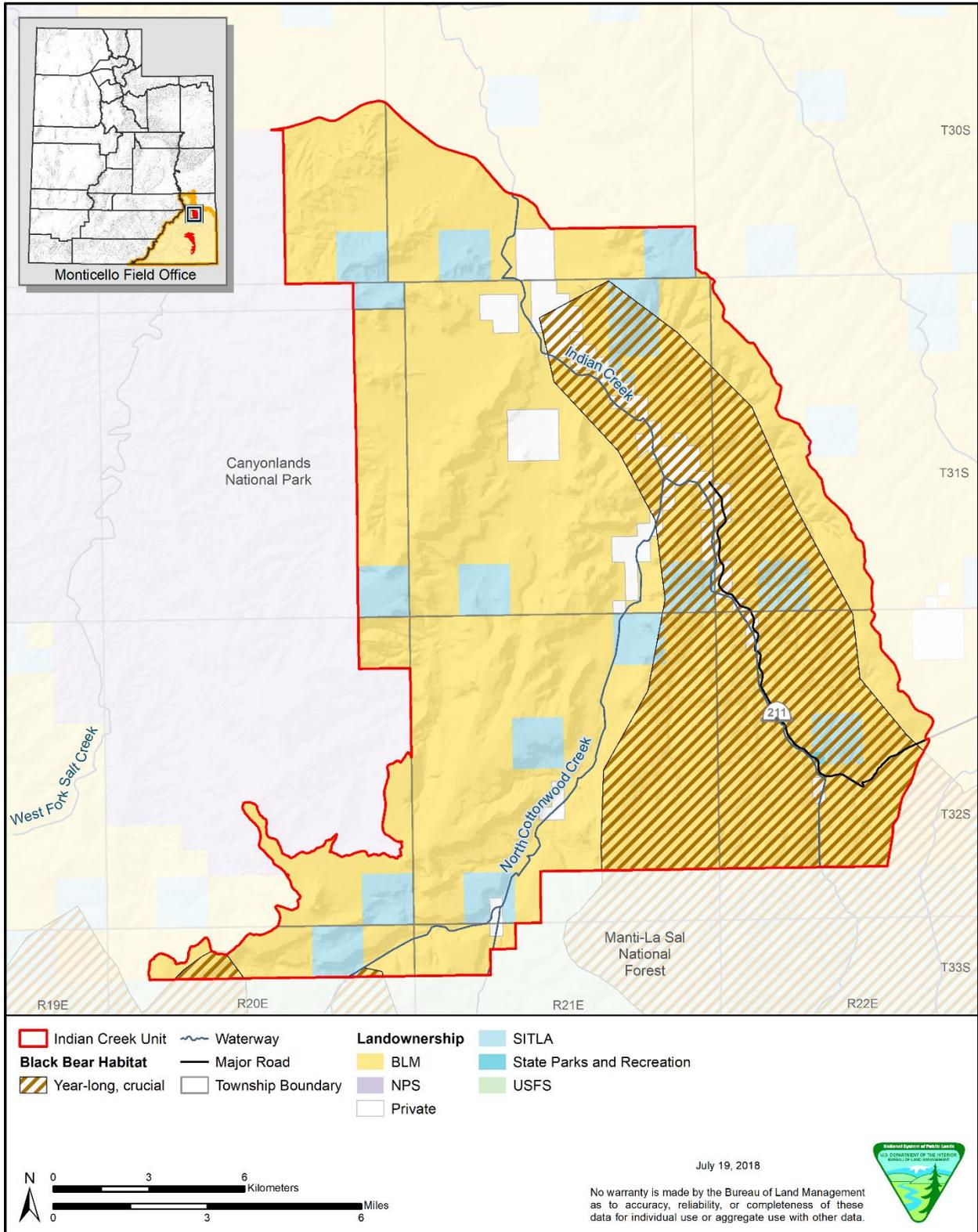
No warranty is made by the Bureau of Land Management as to accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.



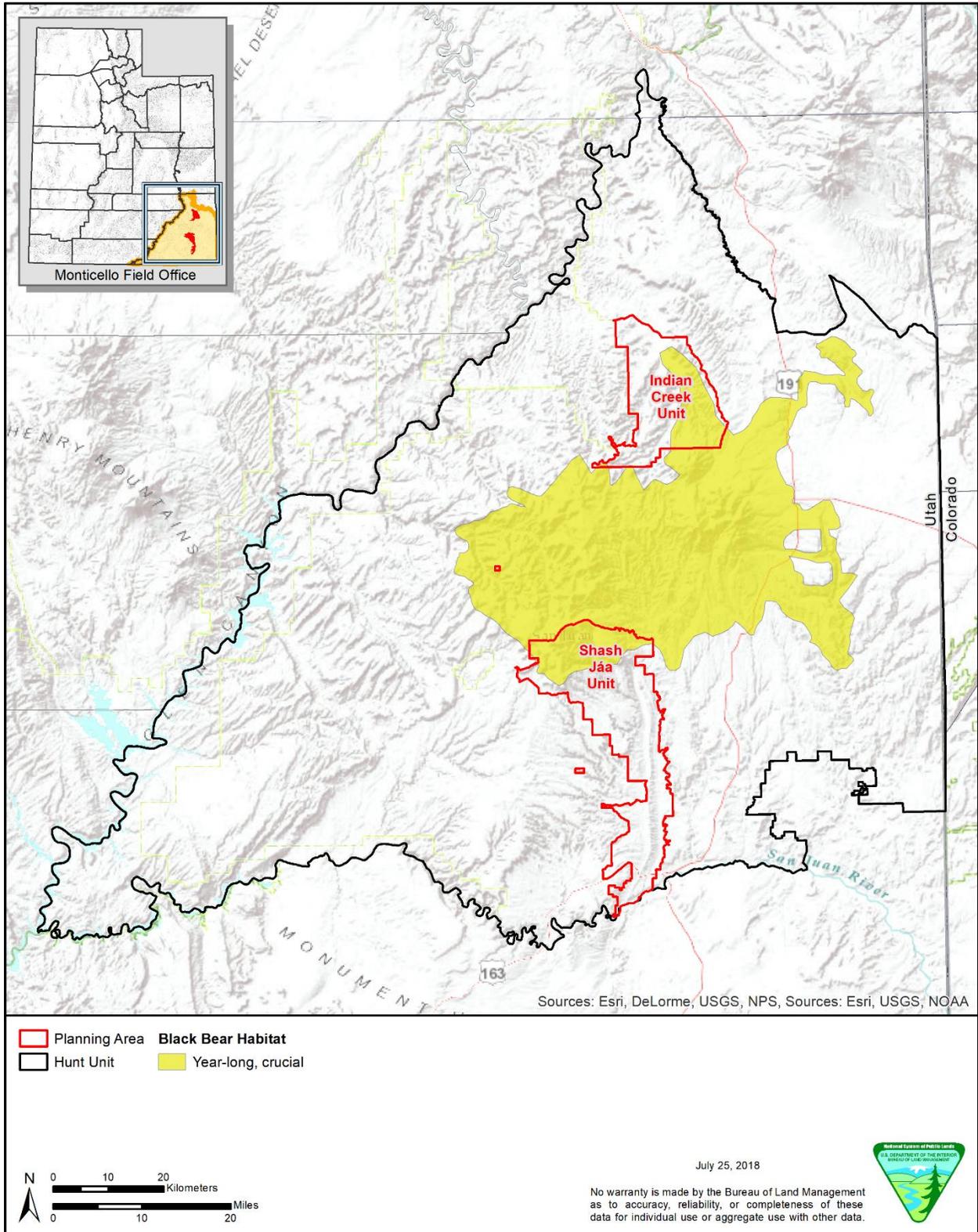
Map WILD-1. Shash Jáa Unit: Black Bear Habitat



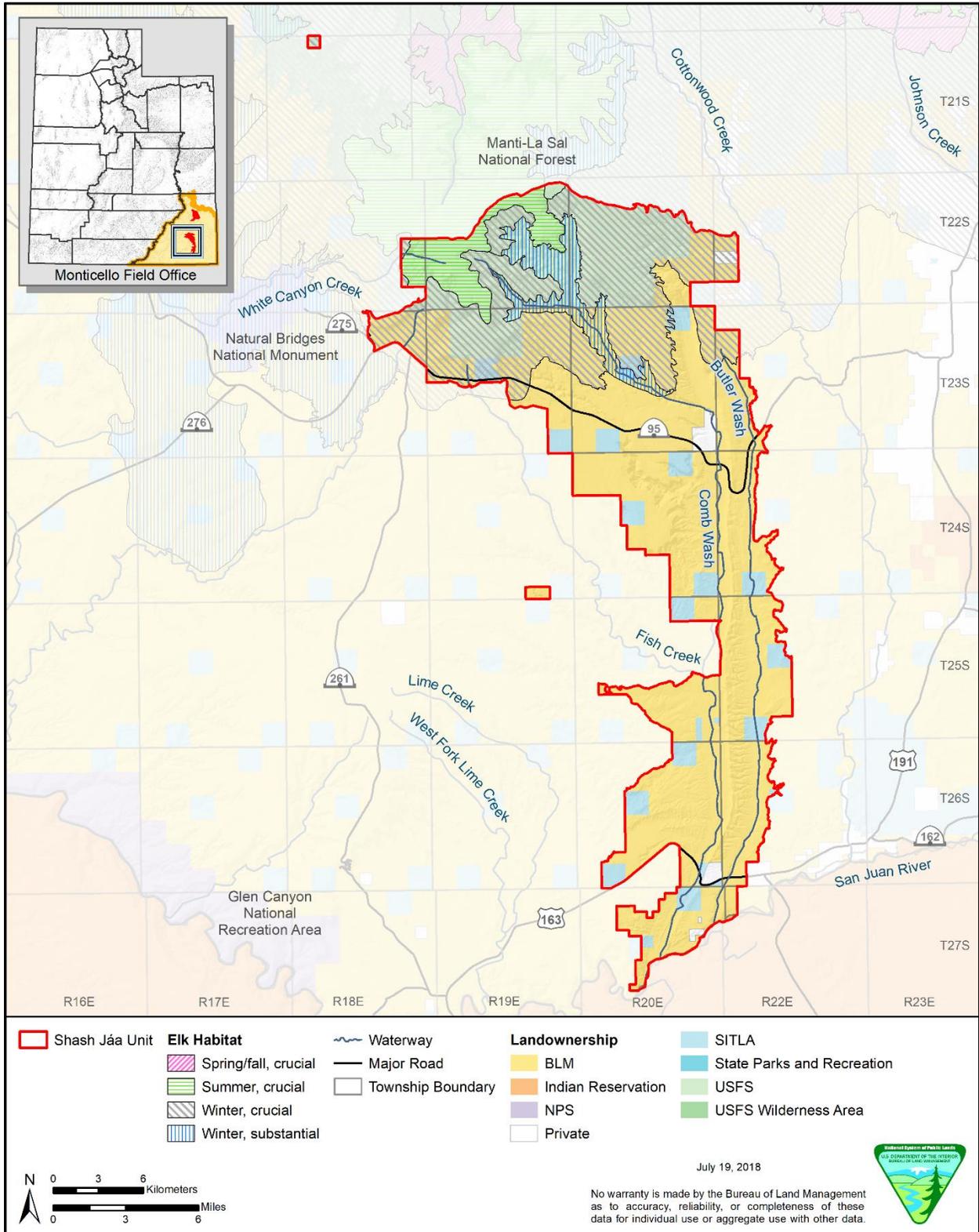
Map WILD-2. Indian Creek Unit: Black Bear Habitat



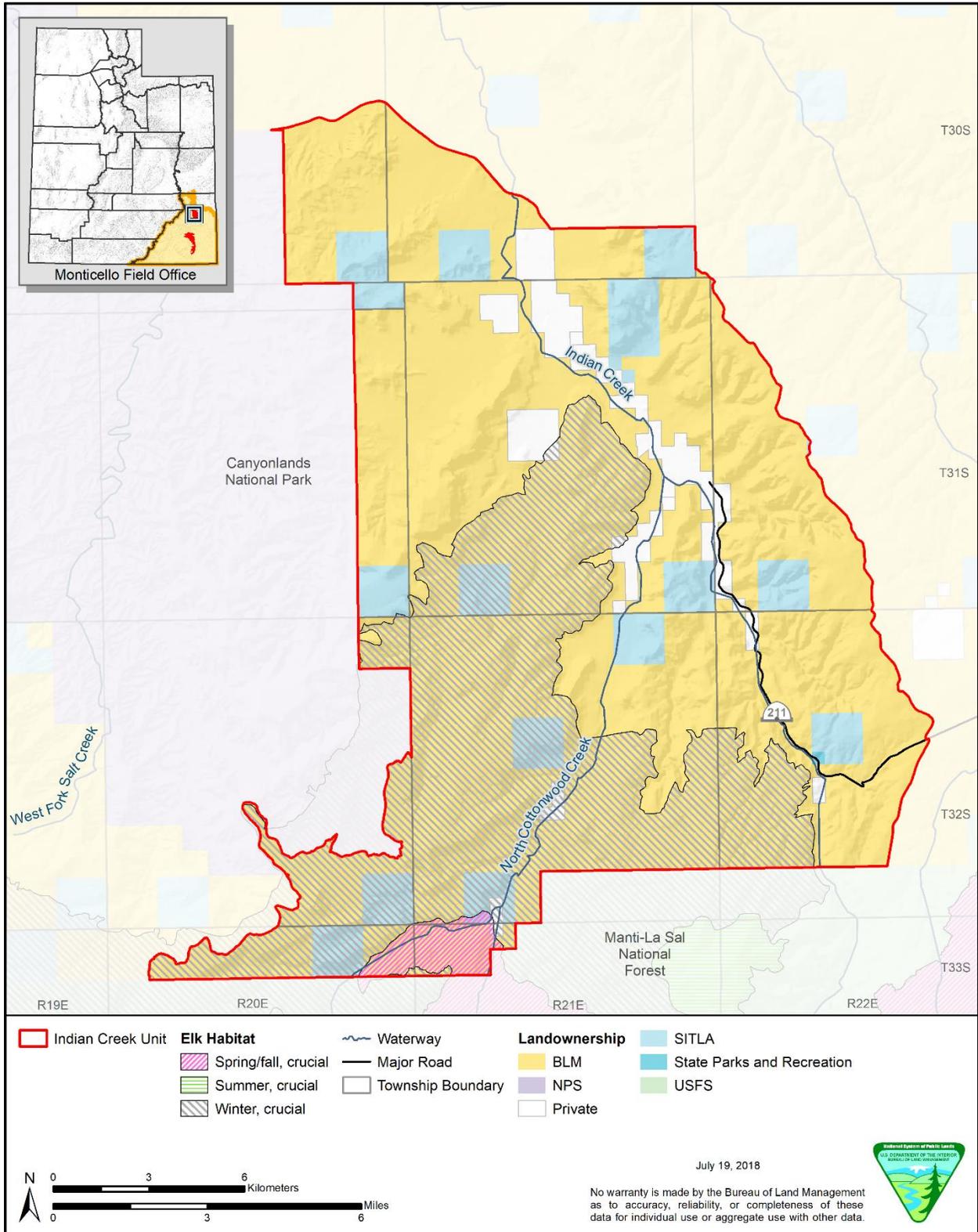
Map WILD-3. Planning Area, Black Bear Habitat, and Hunt Units



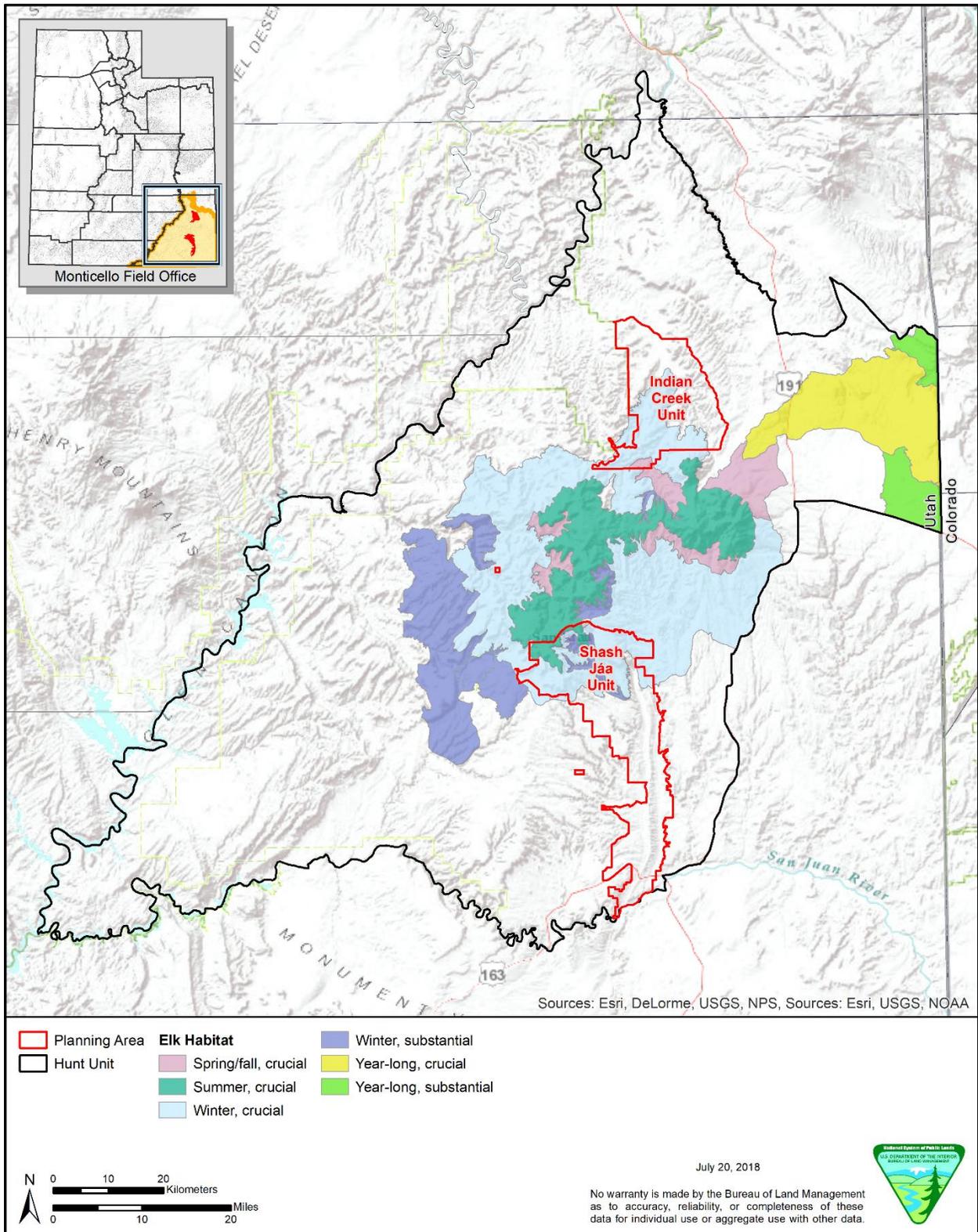
Map WILD-4. Shash Jáa Unit: Elk Habitat



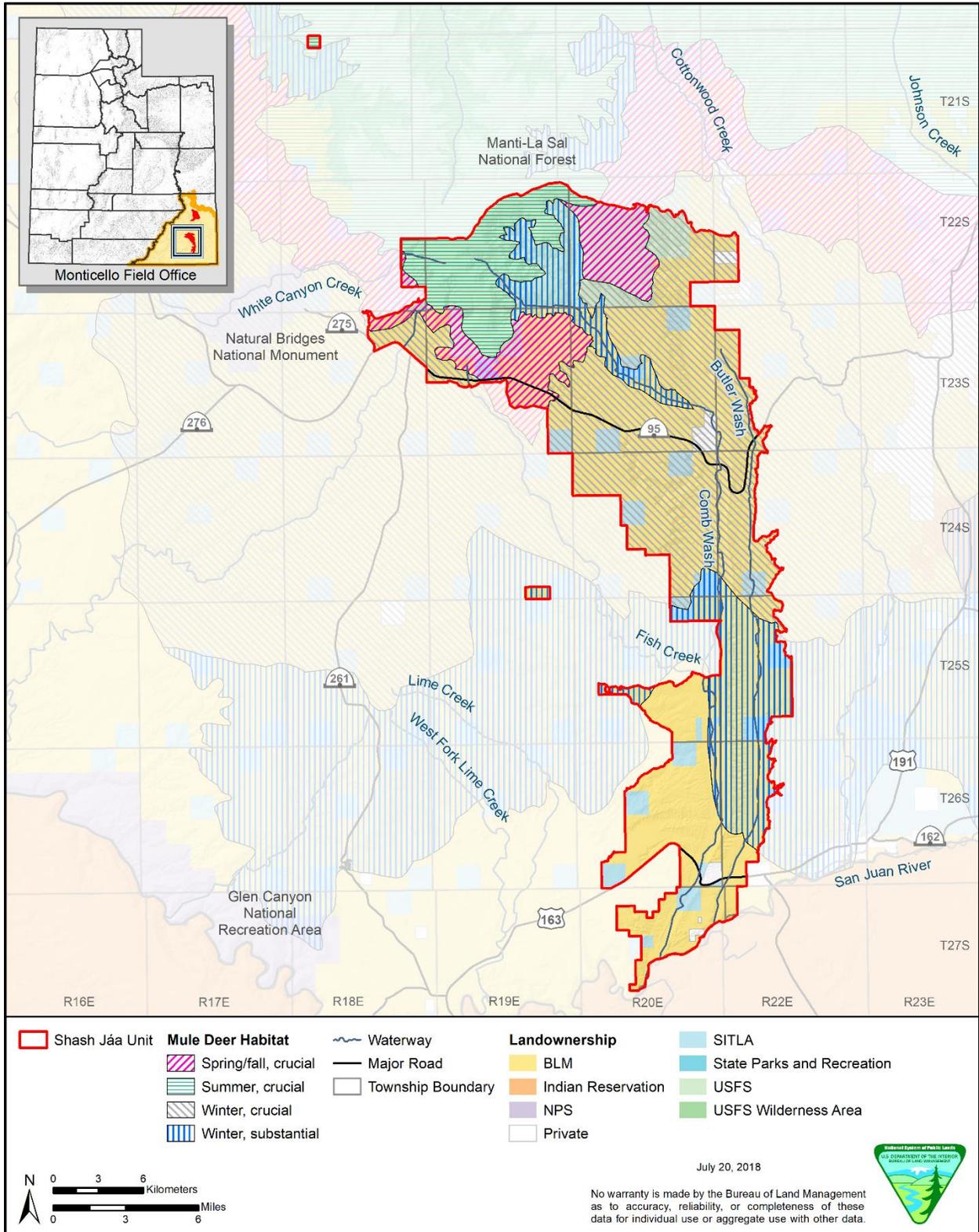
Map WILD-5. Indian Creek Unit: Elk Habitat



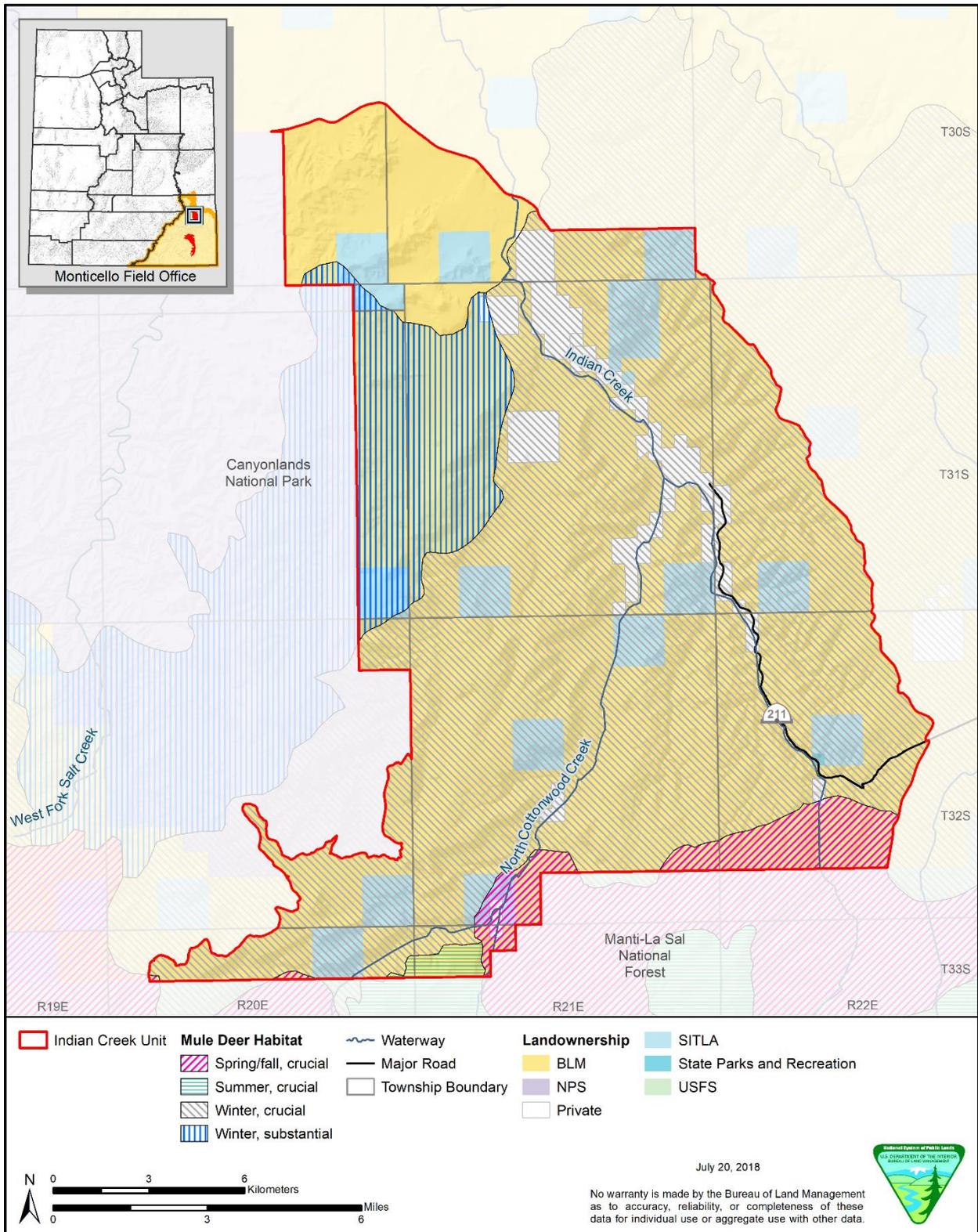
Map WILD-6. Planning Area, Elk Habitat, and Hunt Units



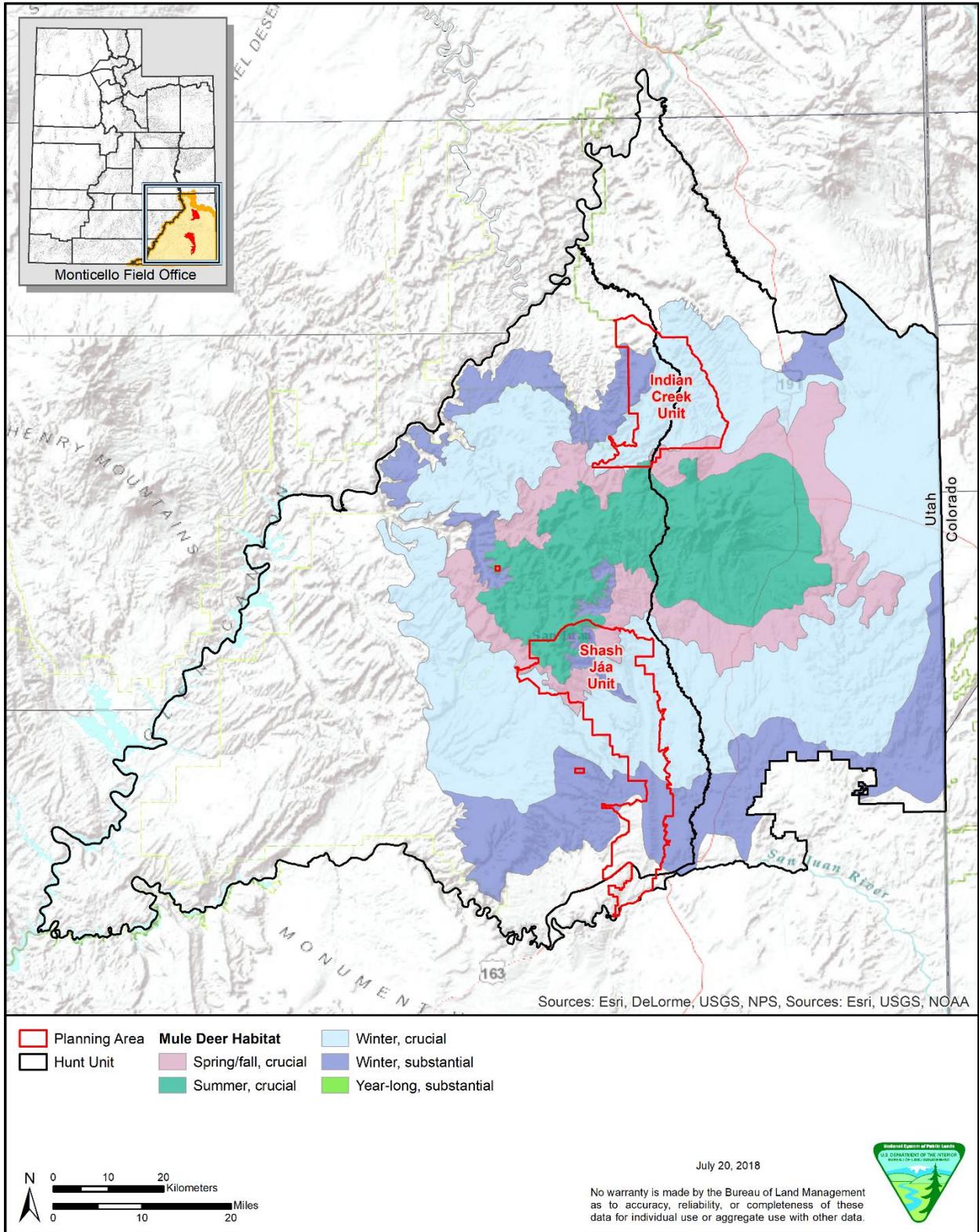
Map WILD-7. Shash Jáa Unit: Mule Deer Habitat



Map WILD-8. Indian Creek Unit: Mule Deer Habitat



Map WILD-9. Planning Area, Mule Deer Habitat, and Hunt Units



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APPENDIX C

Laws, Regulations, Policies, and Plans Considered in the Development of the Monument Management Plans and Environmental Impact Statement



1 INTRODUCTION

In addition to the state and local plans listed in Section 1.7, the BLM and USFS have considered and developed the Monument Management Plans (MMPs) and Environmental Impact Statement (EIS) to be consistent with applicable laws, regulations, policies, and plans including but not limited to those listed in this section.

2 FEDERAL LAWS

Administrative Procedure Act (Public Law 79–404)

Agriculture Risk Protection Act of 2000 (Plant Protection Act) (Public Law 106–224)

Antiquities Act of 1906 (16 USC 431-433)

Archaeological Resources Protection Act of 1979 (16 USC 470aa to 470ee)

Bald and Golden Eagle Protection Act (16 USC 668-668d)

Carlson-Foley Act (43 USC 1241)

Clean Air Act of 1970, as amended (42 USC 7401)

Clean Water Act of 1972 (33 USC 1251 et seq.)

Endangered Species Act (ESA) (16 USC 1531 to 1544), as amended

Energy Independence and Security Act of 2007

Federal Cave Resources Protection Act of 1988

Federal Land Assistance, Management and Enhancement Act of 2009 (3 USC § 1748)

Federal Land Policy and Management Act of 1976 (43 USC 1701), as amended

Federal Lands Recreation Enhancement Act of 2005 (Public Law 108-447)

Federal Noxious Weed Act of 1974 (7 USC 2801 and 7 USC 2814)

Fish and Wildlife Act of 1956 (16 USC 742a et seq.), as amended

Fish and Wildlife Conservation Act of 1980 (16 USC 2901-2911)

Fish and Wildlife Coordination Act of 1934 (16 USC 661-667)

Materials Act of 1947 (30 USC 601-604)

Migratory Bird Treaty Act of 1918 (16 USC 703-712)

Multiple-Use Sustained-Yield Act of 1960 (16 USC 528-531)

National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321–4347)

National Forest Management Act of 1976 (16 USC 1600 et seq.)

National Forest Management Act of 1976, as amended (16 USC 1600 et seq.)

National Historic Preservation Act of 1966, as amended (54 USC 300101–307108)

Native American Graves Protection and Repatriation Act (25 USC 3001-3002)

Noxious Weed Control and Eradication Act of 2004, as amended (Public Law 108–412)

Omnibus Public Land Management Act of 2009 (Public Law 111-11) Federal Regulations

Paleontological Resources Preservation Act of 2009 (16 USC §470)
Petrified Wood Act of 1962 (30 USC 611)
Recreation and Public Purposes Act (43 CFR Part 2740)
Rescissions Act of 1995 (Public Law 104–19, Section 504)
Salinity Control Act of 1974 (Public Law 93-320)
Taylor Grazing Act of 1934 (Public Law 73–482)
Wild and Scenic Rivers Act, 1968 as amended (16 USC 1271 et seq.)
Wilderness Act of 1964 (Public Law 88–577)

3 FEDERAL REGULATIONS

BLM NEPA and Resource Regulations (generally 43 CFR Chapter II)
BLM Off-Road Vehicle Regulations 43 CFR Part 8340
BLM Planning Regulations (43 CFR Part 1600)
BLM Rights-of-Way Regulations (43 CFR 2800 and 2880)
CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500)
USFS NEPA and Resource Regulations (generally 36 CFR 220 through 297)
USFS Planning Regulations (36 CFR 219)
USFS Roadless Rule (36 CFR 294)

4 FEDERAL POLICIES

BLM Handbook H-1601-1 – Land Use Planning
BLM Handbook H-1740-2 – Integrated Vegetation Management
BLM Handbook H-1745 – Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants
BLM Handbook H-1780-1 – Improving and Sustaining BLM-Tribal Relations
BLM Handbook H-2740-1 – Recreation and Public Purposes
BLM Handbook H-2930-1 – Recreation Permit and Fee Administration
BLM Handbook H-8270-1 – General Procedural Guidance for Paleontological Resource Management
BLM Handbook H-8320-1 – Planning for Recreation and Visitor Services
BLM Handbook H-8342 – Travel and Transportation Handbook
BLM Handbook H-9011-1 – Chemical Pest Control
BLM Handbook H-9014 – Use of Biological Control Agents of Pests on Public Lands
BLM Handbook H-9015 – Integrated Weed Management

BLM IM 2009-112 – Updated Policy for Implementation of Federal Wildland Fire Management Policy

BLM IM 2016-013 – Managing for Pollinators on Public Lands

BLM Manual 1601 – Land Use Planning

BLM Manual 1613 – Areas of Critical Environmental Concern.

BLM Manual 1626 – Travel and Transportation Management Manual

BLM Manual 1780 – Tribal Relations

BLM Manual 4100 – Grazing Administration

BLM Manual 5000 – Forest Management

BLM Manual 6100 – National Landscape Conservation System Management

BLM Manual 6220 – National Monuments, National Conservation Areas, and Similar Designations

BLM Manual 6310 – Conducting Wilderness Characteristics Inventory on BLM Lands

BLM Manual 6320 – Considering Lands with Wilderness Characteristics in BLM Land Use Planning Process

BLM Manual 6330 – Management of Wilderness Study Areas

BLM Manual 6340 – Management of Designated Wilderness Areas

BLM Manual 6500 – Wildlife and Fisheries Management

BLM Manual 6840 - Special Status Species Management

BLM Manual 7240 – Water Quality Manual

BLM Manual 7300 – Air Resource Management

BLM Manual 8100 – The Foundations for Managing Cultural Resources

BLM Manual 8110 – Identifying and Evaluating Cultural Resources

BLM Manual 8130 – Planning for Uses of Cultural Resources

BLM Manual 8140 – Protecting Cultural Resources

BLM Manual 8150 – Permitting Uses of Cultural Resources

BLM Manual 8400 - Visual Resource Management System

BLM Manual 8431 – Visual Resource Management System

BLM Manual 9011 – Chemical Pest Control

DOI Departmental Manual 517 DM 1 – Environmental Quality Programs: Pesticides, Integrated Pest Management Policy

DOI Departmental Manual 609 DM 1 – Policy and Responsibilities: Weed Control Program

BLM Manual and Handbook 8270 – Paleontological Resource Management

BLM NEPA Handbook (H-1790-1)

BLM IM-UT-2005-091 – Utah BLM Riparian Management Policy

Executive Order 11593 – Protection and Enhancement of the Cultural Environment

Executive Order 11988 – Floodplain Management

Executive Order 11990 – Protection of Wetlands

Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority and Low Income Populations

Executive Order 13007 – Indian Sacred Sites

Executive Order 13084 – Consultation and Coordination with Indian Tribal Governments

Executive Order 13112 – Preventing the Introduction and Spread of Invasive Species, as amended by Executive Order 13751 – Safeguarding the Nation from the Impacts of Invasive Species

Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds

Federal Aviation Administration Civil Operations Part 107 - Small Unmanned Aircraft Regulations

Secretarial Order 3362 - Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors

U.S. Department of the Interior Operational Procedures Memorandum (OPM)-11

USFS Handbook 1909.12 - Land Management Planning

USFS Handbook 2209.21 - Rangeland Ecosystem Analysis and Monitoring

USFS Handbook 2509.22 – Soil and Water Conservation Practices Handbook

USFS Handbook 5700 – Aviation Management

USFS Manual FSM 1500 – External Relations

USFS Manual FSM 1900 – Planning

USFS Manual FSM 2200 – Range Management

USFS Manual FSM 2300 – Recreation, Wilderness, and Related Resource Management

USFS Manual FSM 2400 – Timber Management

USFS Manual FSM 2500 – Watershed and Air Management

USFS Manual FSM 2600 – Wildlife, Fish, and Sensitive Plant Habitat Management

USFS Manual FSM 2700 – Special Uses Management

USFS Manual FSM 2900 – Invasive Species Management

USFS NEPA Handbook (FSH 1909.15)

5 FEDERAL PLANS

Bonytail Recovery Plan (USFWS 2002)

Canyonlands National Park and Orange Cliffs Unit of Glen Canyon National Recreation Area Backcountry Management Plan (NPS 1995)

Canyonlands National Park General Management Plan (NPS 1979)

Canyonlands National Park Resource Management Plan (NPS 1996)

Canyonlands Wilderness Recommendation (NPS 1974)

Colorado Pikeminnow Recovery Goals (USFWS 2002)

Conservation and Management Plan for Three Fish Species in Utah: Addressing Needs for Roundtail Chub (*Gila robusta*), Bluehead Sucker (*Catostomus discobolus*), and Flannelmouth Sucker (*Catostomus latipinnis*) (UDWR 2006)

Conservation Agreement and Strategy for Colorado River Cutthroat Trout (*Oncorhynchus clarkii pleuriticus*) in the state of Utah (UDNR 1997)

Final Programmatic Environmental Impact Statement Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on BLM Lands in 17 Western States (BLM 2016)

Final Programmatic Environmental Impact Statement Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007)

Final Recovery Plan for the Southwestern Willow Flycatcher (USFWS 2002)

Humpback Chub Recovery Goals (USFWS 2002)

Mexican Spotted Owl Recovery Plan, First Revision (USFWS 2012)

Pollinator-Friendly Best Management Practices for Federal Lands (USDA and DOI 2015)

Razorback Sucker Recovery Plan (2002)

Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (USFWS 1987)

6 STATE PLANS

Elk Herd Unit Management Plan, Elk Herd Unit # 14, San Juan (2016)

State of Utah Resource Management Plan (2018)

Utah Big Horn Sheep Statewide Management Plan (n.d.)

Utah Catastrophic Wildfire Reduction Strategy (n.d.)

Utah Elk Statewide Management Plan (n.d.)

Utah Forest Action Plan (2016)

Utah Mule Deer Statewide Management Plan (n.d.)

Utah Noxious Weed Act (Rule R68-9)

Utah Pollutant Discharge Elimination System, UAC R317-8

Utah Smoke Management Plan (1999, as revised)

Utah Wildlife Action Plan (2015)

Utah's List of Impaired Waters (303d) (2010)

Utah's Nonpoint Source Pollution Management Plan (2000)

Utah's State Comprehensive Outdoor Recreation Plan (2014)

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APPENDIX D

Cultural Resources Monitoring Framework



1 PURPOSE AND NEED

The desired outcome of adaptive management strategies for cultural resources is to provide for the care and management of objects identified in Proclamation 9558, as modified by Proclamation 9681, by preserving and maintaining those characteristics of culturally significant properties—including historic properties eligible for or listed on the National Register of Historic Places (NRHP), traditional cultural properties (TCPs), American Indian sacred sites, or cultural landscapes—that make them important. Effective adaptive management to meet expected outcomes requires that clear resource indicators be established that can be measured to assess any changes to those resources, thresholds for implementation of new management actions, methodologies for monitoring resource conditions relative to stated indicators to determine whether management action thresholds have been met, and a suite of management actions to be taken should a threshold be crossed. This document outlines a framework for developing site-specific monitoring plans for cultural resource localities within the Monument where adaptive management strategies are applied and ongoing location-specific monitoring is necessary. The completed implementation-level cultural resource monitoring and management plan(s) will include the site-specific resource indicators, thresholds, and adaptive management actions to be taken when thresholds are crossed.

2 CULTURAL RESOURCE INDICATORS

2.1 National Register of Historic Places Criteria

Indicators of resource conditions for cultural resources such as historic properties, archaeological sites, TCPs, American Indian sacred sites (when they are or contain resources that are eligible for inclusion in the NRHP), and cultural landscapes are those criteria established for inclusion of a property in the NRHP. These criteria are detailed in 36 Code of Federal Regulations (CFR) 60.4:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or
- (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) that have yielded, or may be likely to yield, information important in prehistory or history.

2.2 Types of Significance

The NRHP identifies four types of significance (36 CFR 60.4(a-d)). The National Park Service (NPS), which administers the NRHP, has provided guidance on the characteristics of properties that might meet one or more of these types of significance (NPS 1997:11–24). Table D-1 provides a summary of the definitions provided in that document for each type of NRHP significance criteria.

Table D-1. Definitions of Types of Significance for National Register of Historic Places Properties

Element of Integrity	Definition
Criterion A: Event	Properties can be eligible for the NRHP if they are associated with events that have made a significant contribution to the broad patterns of our history.
Criterion B: Person	Properties may be eligible for the NRHP if they are associated with the lives of persons significant in our past.
Criterion C: Design/construction	Properties may be eligible for the NRHP if they embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
Criterion D: Information potential	Properties may be eligible for the NRHP if they have yielded, or may be likely to yield, information important in prehistory or history.

2.3 Elements of Integrity

Of note among the criteria for considering the significance of a property for its inclusion in the NRHP are seven elements of integrity: location, design, setting, materials, workmanship, feeling, and association. The NPS (1997:44–45) has provided guidance that describes and better defines these elements of integrity. Definitions of each element of integrity as described by this guidance are summarized in Table D-2.

Table D-2. Definitions of Elements of Integrity for National Register of Historic Places Properties

Element of Integrity	Definition
Location	Location is the place where the historic property was constructed or the place where the historic event occurred.
Design	Design is the combination of elements that create the form, plan, space, structure, and style of a property.
Setting	Setting is the physical environment of a historic property.
Materials	Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
Workmanship	Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
Feeling	Feeling is a property's expression of the aesthetic or historic sense of a particular period of time.
Association	Association is the direct link between an important historic event or person and a historic property.

3 THRESHOLDS FOR MANAGEMENT ACTION

Archaeological sites in Utah, both historic and prehistoric, are currently being documented as they are discovered on a Utah Archaeology Site Form (UASF) (Interagency Heritage Resources Work Group 2018). This form also allows for site information to be updated or for the site to be completely re-recorded, as appropriate, during subsequent visits. Sites on U.S. Forest Service lands may be recorded using U.S. Forest Service archaeological site forms, which record comparable data. Previously recorded sites are documented on earlier versions of Utah archaeological site forms. These forms are designed to prompt the collection of a host of data for each locality relevant for researchers and for land managers tasked with protecting and preserving significant historic localities. These forms prompt researchers to document a number of characteristics of a locality that are relevant to those indicators of resource conditions discussed above. Changes in condition at cultural resource sites that have already been documented on standard site forms can

also be recorded on site monitoring forms. Particularly salient among those characteristics for which researchers document resource condition observations are impacting agents, site condition, retention of integrity, and NRHP status. Changes to the features of a significant historic property, TCP, American Indian religious site, or cultural landscape that make it eligible for inclusion on the NRHP are appropriate thresholds across which consideration of a change in management action would be appropriate.

3.1 Impacting Agents

Impacting agents are those that may be altering characteristics of a locality that make it eligible for listing on the NRHP, including those that may affect a site's type of significance or one or more elements of integrity. The UASF form provides a short list of common impacting agents that include erosion, livestock concentration, recreation, road/trail, vandalism/looting, none, and other. The form also provides a free-text entry portion, where researchers documenting a locality are expected to describe those agents impacting the site. Site monitoring forms contain similar impacting agents and text options. A change to a locality's impacting agents could be a threshold for consideration of new or increased management action if monitoring were to identify the addition of a new impacting agent or a change is observed in the relative effects of an already identified impacting agent.

3.2 Site Condition

Site condition is determined on-site by a qualified person conducting a site documentation or site monitoring visit. The UASF (or site monitoring) form provides a list of site conditions that include stable, deteriorating, imminently threatened, and destroyed. A stable site is defined as one where impacting agents such as erosion, decay, or other forces of nature are affecting the locality, as would be expected from the antiquity of the site. A deteriorating site is one where, if current impacts continue, the site is in danger of significant loss of integrity in a 3- to 15-year time frame. An imminently threatened locality is one where, if current impacts continue, the locality is likely to lose significant elements of integrity in less than 3 years. A destroyed site is one where impacting agents have left a locality completely devoid of any physical evidence of its one-time presence or have damaged a site's characteristics to the point that it no longer meets the criteria for listing in the NRHP. Changes to the condition of a site that adversely affect those characteristics of the site that make it eligible for the NRHP are threshold events that would trigger a change in management action.

3.3 Retention of Integrity

Integrity, as it relates to significant cultural resources such as historic or prehistoric properties, TCPs, American Indian sacred sites (when they are or contain resources that are eligible for inclusion in the NRHP), or cultural landscapes, was described in Section 2.3. The UASF form asks researchers documenting a locality to assess which of the seven elements of integrity important for a site's NRHP eligibility are retained at a location. Deterioration of a locality such that an element of integrity once present at a site is lost is a threshold across which a management action would occur.

3.4 National Register of Historic Places Status

NRHP status of a site refers to whether the site is currently listed on the register or whether the researcher documenting the site considers it to be eligible or not eligible for listing. Formal determinations of whether a site is eligible or not eligible for NRHP listing are made by agencies in consultation with the State Historic Preservation Officer during consultation required by Section 106 of the National Historic Preservation Act. NRHP eligibility can be reevaluated and changed by agencies in consultation with SHPO when better information is available on the elements of site integrity (see Table D-2). A change in the NRHP status of a locality is a threshold across which new management actions would occur.

4 CULTURAL RESOURCES MONITORING METHODOLOGIES

4.1 Location Selection

Historic properties, archaeological sites, TCPs, American Indian sacred sites, or cultural landscapes for which adaptive management strategies are implemented will be subject to cultural resources monitoring. In addition, the agencies may select localities for monitoring if they determine that a particular location may be subject to impacts and management of that particular location necessitates monitoring site conditions. The agencies will also select localities for monitoring through government-to-government consultation with American Indian Tribes and, if applicable, Multi-Tribal Organizations.

4.2 Baseline Assessment

The initial step in establishing a site-specific monitoring program is to document the baseline conditions of the site so that any future changes to those conditions can be clearly identified. For newly discovered localities, the baseline assessment consists simply of a thorough documentation of the site on a current UASF form (or a U.S. Forest Service form), with careful attention given to a complete description of those aspects of the form relating to potential management action thresholds.

Localities that have been previously documented are not likely to have fully detailed descriptions of those site characteristics considered most critical when considering the adaptive management of a site. Nonetheless, providing important details about site condition allows relevant characteristics to be inferred. For baseline assessments of localities included in a monitoring program, these prior data will be carefully evaluated and considered. For each of these previously documented localities, the site will be visited and documented, incorporating information from prior documentation, as appropriate, to establish a baseline condition assessment.

4.3 Cultural Resources Monitoring

Cultural resources monitoring of selected historic properties, archaeological sites, TCPs, American Indian sacred sites, or cultural landscapes will occur at a frequency determined by the agencies that is appropriate to the management objectives of each monitored locality. A site may be subject to more frequent monitoring if impacts to the site are expected to occur or are observed to occur often or are substantial. Less frequent monitoring may be appropriate where impacting agents are rare or have little impact. Monitoring will be conducted by agency personnel or by site stewards.

Documentation of site condition during monitoring will be conducted using protocols of the Utah Site Steward Program's electronic site monitoring system to record on-site observations. When significant changes are noted, the affected site's UASF form will be supplemented with relevant site photographs that show impacts from impacting agents and document any changes to the types or relative effect of impacting agents.

5 MANAGEMENT ACTIONS

Adaptive management strategies for historic or prehistoric properties, TCPs, American Indian sacred sites, or cultural landscapes establish a series of if-then actions—if monitoring shows that X is happening, then management action Y will be taken. Because such actions are determined on a site-specific basis and are dependent on the management objectives and the desired outcome for a particular locality, a comprehensive list of management actions to be taken should a threshold be crossed for one or more resource indicators described in this cultural resources monitoring framework is not possible. In many cases, however, appropriate management options for classes of site types allocated to one or more use classes can be presented. Appendix E, Cultural Resources Allocation Criteria and Management Strategies, describes management strategy options for different site types allocated for research, Traditional Use, and/or Public Use.

6 LITERATURE CITED

- Interagency Heritage Resources Work Group (IHRWG). 2018. Utah Archaeology Site Form Manual. Interagency Heritage Resources Work Group, Salt Lake City, Utah.
- National Park Service (NPS). 1997. How to Apply the National Register Criteria for Evaluation. Rev. ed. *National Register Bulletin 15*. National Park Service Interagency Resources Division, National Register Branch, Washington, D.C.

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APPENDIX E

Cultural Resources Allocation Criteria and Management Strategies



1 PUBLIC USE SITE CRITERIA FOR DETERMINING ARCHAEOLOGICAL SITE SUITABILITY FOR DEVELOPED PUBLIC USE

The following are the criteria and processes to follow in determining whether an archaeological site would be suitable for Public Use within Bears Ears National Monument. Developed Public Use sites are those that are promoted to the public and prepared for visitation. They are generally identified in frontcountry recreation zones where their interpretation is consistent with the visitor experience goals of those zones. Undeveloped Public Use sites are not promoted to the public nor prepared for visitation, and are generally located in backcountry recreation zones where they contribute to the sense of discovery that is part of the visitor experience goal for those zones. Some sites have already been identified for Public Use (Developed) and are listed in Section 2.4.1.2 of the Environmental Impact Statement. Other sites may be added to the Public Use (Developed) allocation in response to changing conditions using the criteria listed below. Allocation of sites to Public Use (Developed) does not guarantee that these sites will be developed.

Allocation of sites to Public Use means that the desired outcome for those sites is interpretation and long-term preservation (Bureau of Land Management Planning Handbook 1606-1), and that such use is consistent with the care and management of the Monument's objects as required by Presidential Proclamation 9558 as modified by Presidential Proclamation 9681. Similarly, U.S. Forest Service (USFS) sites can be allocated to the category of "enhancement," in which the interpretive and educational value of these cultural resources is balanced with protective and monitoring measures (USFS Manual 2309-12-30). In all cases, identifying appropriate site protective measures and monitoring to measure their effectiveness are part of any allocation of sites to Public Use.

These protective measures could include removing multiple social trails and establishing one foot trail; stabilizing architectural features using aboriginal techniques; subtly using natural materials (brush and stones) to route traffic through sites and protect site features (such as middens); installing buck and pole fences (to restrict livestock movement) and interpretive signs; backfilling site features and wall bases, etc.

Allocation of cultural resources to Developed or Undeveloped Public Use includes two steps. The first is accomplished using existing information about sites in consultation with American Indian Tribes as detailed in Appendix F of the *Bears Ears National Monument: Monument Management Plans and Environmental Impact Statement Shash Jaa and Indian Creek Units*. The second occurs at the implementation level and involves a wider group of stakeholders.

1. The following questions will be used to assess whether or not a particular site might be appropriate for allocation to Public Use.
 - Are American Indian Tribes amenable to Public Use?
 - Is the site already seeing high levels of visitation, and are visitors going to go there anyway?
 - Can visitor impacts be mitigated in ways that do not adversely affect those characteristics that make the site eligible for the NRHP or alter its cultural value?
 - Does the site offer new and/or unique public education opportunities?
 - Can the site be managed within the current financial budgets and staff, including route maintenance?
 - Is the allocation to either Developed or Undeveloped Public Use appropriate, given the site's recreation management zone?

- Has the site already been stabilized or otherwise prepared for visitation?
 - Does legal public access currently exist, and, if not, can a right-of-way be obtained?
 - Do foot or off-highway vehicle trails already exist to the site?
 - Is a parking area already available for use by visitors to the site?
 - Will visitation at the site potentially affect other sites along its access trail or near parking?
2. The following specific steps will be completed before opening a site to the public:
- Consultation with appropriate American Indian Tribes regarding the suitability of site selection and public information content.
 - Techniques/methods may include all or part of the following:
 - Document the site prior to increased visitation
 - Updating site records
 - Completing Historic American Building Survey documentation of standing architecture or using 3-D scanning and photogrammetry
 - Mapping surface features and artifacts
 - Analyzing 100% of the surface artifacts or appropriate sample(s) in the field (in some cases, collecting materials that are likely to be stolen)
 - Testing/excavation
 - Preparing a site condition/preservation assessment
 - Prepare a site-specific cultural resources management plan and/or interpretation plan. The plan(s) would detail how the site would be accessed and/or developed, physical alterations (such as trail development), site areas needing hardening, interpretation methods (such as signs, brochures, etc.), site monitoring and protection, maintenance, and/or staffing.
 - Complete actions for compliance with Section 106 of the National Historic Preservation Act. (Note: This could include mitigation recommendations, depending upon the determination of effect/impact results. Mitigation of impacts could include testing/data recovery on all or portions of the site, more detailed documentation of the site, and/or other measures determined on a case-by-case basis).
 - Complete National Environmental Policy Act analysis and the incorporation of actions identified above.

Table E-1 details various potential management strategies for sites in the three allocation categories to be used with Monument cultural resources.

Table E-1. Management Strategies per Cultural Allocations Criterion

	Common Management Strategies	Scientific Use Allocation – Management Strategies	Traditional Use Allocation – Management Strategies	Public Use Allocation – Management Strategies
Prehistoric: sheltered residential, sheltered non-residential, and open architectural	<ul style="list-style-type: none"> • Allocate prehistoric sheltered residential, sheltered non-residential, and open architectural sites that are eligible for or listed in the NRHP to Scientific Use. • Allocate prehistoric sheltered residential, sheltered non-residential, and open architectural sites that are eligible for or listed in the NRHP to Traditional Use in consultation with American Indian Tribes. • Consider prehistoric residential, sheltered non-residential, and open architectural sites that are eligible for or listed in the NRHP with evidence of public visitation to Public Use. • Allow emergency stabilization if natural or cultural threats are causing loss of integrity to standing architectural or archaeological features. • Encourage the use of site stewards for monitoring. 	<ul style="list-style-type: none"> • Allow scientific research subject to appropriate research design and Tribal input. • Permit surface collection of artifacts if there is a threat of loss or destruction. 	<ul style="list-style-type: none"> • Document traditional and ongoing uses of prehistoric sheltered residential, sheltered non-residential, and open architectural sites; maintain the confidentiality of this information. • Encourage Traditional Use and visitation to prehistoric sheltered residential, sheltered non-residential, and open architectural sites. • Encourage site monitoring by traditional users. • Develop additional management actions as needed in consultation with American Indian Tribes. 	<ul style="list-style-type: none"> • Stabilize or rehabilitate standing structures using traditional techniques, as appropriate, if there is a threat of loss or destruction. • Prepare management plans for all Public Use sites identified by the agency within the Monument. These would identify any resource protection needs and recommended actions (including, but not limited to, trail reroutes, feature backfilling, etc.) and interpretive needs (including, but not limited to, signs and interpretive kiosks). This includes site visitation etiquette and Archaeological Resources Protection Act (ARPA) penalties. • Establish fee sites at Public Use prehistoric sheltered residential, sheltered non-residential, and open architectural sites, as appropriate. Allow for fee waivers for traditional uses.
Prehistoric: artifact/lithic scatter with features, artifact/lithic scatter, and lithic source/quarry	<ul style="list-style-type: none"> • Allocate prehistoric artifact/lithic scatter with features, artifact/lithic scatter, and lithic source/quarry sites that are eligible for or listed in the NRHP to Scientific Use. • Allocate prehistoric artifact/lithic scatter with features, artifact/lithic scatter, and lithic source/quarry sites that are eligible for or listed in the NRHP to Traditional Use in consultation with American Indian Tribes. • Consider prehistoric artifact/lithic scatter with features, artifact/lithic scatter, and lithic source/quarry sites that are eligible for or listed in the NRHP with evidence of public visitation to Public Use. • Allow emergency stabilization if natural or cultural threats are causing a loss of integrity to archaeological features. • Encourage the use of site stewards for monitoring. 	<ul style="list-style-type: none"> • Allow scientific research subject to appropriate research design. • Permit surface collection of artifacts if there is a threat of loss or destruction. 	<ul style="list-style-type: none"> • Document traditional and ongoing uses of prehistoric artifact/lithic scatter with features, artifact/lithic scatter, and lithic source/quarry sites; maintain the confidentiality of this information. • Encourage Traditional Use and visitation to prehistoric artifact/lithic scatter with features, artifact/lithic scatter, and lithic source/quarry sites. • Encourage site monitoring by traditional users. • Develop additional management actions as needed in consultation with American Indian Tribes. 	<ul style="list-style-type: none"> • Prepare management plans for sites to identify resource protection needs (including, but not limited to, trail reroutes and selected artifact surface collection) and interpretive needs (including, but not limited to, signs, interpretive kiosks, and driving guides). This includes site visitation etiquette and ARPA penalties. • Establish fee sites at Public Use prehistoric artifact/lithic scatter with features, artifact/lithic scatter, and lithic source/quarry sites, as appropriate. Allow for fee waivers for traditional uses.

	Common Management Strategies	Scientific Use Allocation – Management Strategies	Traditional Use Allocation – Management Strategies	Public Use Allocation – Management Strategies
Prehistoric: rock writings	<ul style="list-style-type: none"> • Allocate rock writings eligible for or listed in the NRHP with no evidence of Public Use to Traditional Use and/or Scientific Use. • Do not discharge NRHP-eligible or NRHP-listed rock writings from management. • Conduct condition monitoring of rock writing on at-risk/threatened sites on a periodic basis. • Limit livestock and human contact with rock writings through physical barriers (fences or natural barriers such as plantings or boulder placement). • Allow emergency stabilization if natural or cultural threats are causing a loss of integrity to rock writings. • Evaluate fire potential and remove fuels where there is a threat of loss. • Encourage the use of site stewards for monitoring. • Prioritize identification efforts at Traditional and Public Use sites. 	<ul style="list-style-type: none"> • Limit permitted surface collection of artifacts on non-rock writing portions of sites under ARPA, unless there is a threat of loss or destruction. • Use the best and most accurate technologies available to photograph and gather locational information at all rock writings (for example, 3-D scanning). • Take detailed measured drawings and sub-meter global positioning system locations of all panels. • Allow Scientific Use that causes negligible physical damage to rock writings. 	<ul style="list-style-type: none"> • Document traditional and ongoing uses of rock writings; maintain confidentiality of this information. • Encourage traditional use and visitation to rock writings. • Where possible, provide accessible trails to rock writings. • Encourage site monitoring by traditional users. 	<ul style="list-style-type: none"> • In consultation with American Indian Tribes, develop site-specific management plans for Public Use rock writing sites. This would identify site protection needs and recommended actions (including, but not limited to, delineated trails) and interpretive needs (including, but not limited to, trailhead signs). • Establish fee sites at Public Use rock writing sites, as appropriate. Allow for fee waivers for traditional uses.
Historic: architectural (residential, farming/ranching, mining, general industrial, community, and other), including historic American Indian farming/ranching sites	<ul style="list-style-type: none"> • Allocate historic architectural sites that are eligible for or listed in the NRHP to Scientific Use. • Allocate historic architectural sites that are eligible for or listed in the NRHP with evidence for public visitation to Public Use. • Evaluate fire potential and remove fuels where there is a threat of loss. • Encourage the use of site stewards for monitoring. 	<ul style="list-style-type: none"> • Allow scientific research subject to appropriate research design. • Permit surface collection of artifacts if there is a threat of loss or destruction, with input from American Indian Tribes. • Prepare a historic context report for each resource. 	<ul style="list-style-type: none"> • Document historic context and relevant associations with historically important people and/or events. • Encourage site monitoring by traditional users/public interest groups. • Develop additional management actions, as needed, in consultation with American Indian Tribes. 	<ul style="list-style-type: none"> • Stabilize or rehabilitate standing structures, as appropriate, if there is a threat of loss or destruction. • Prepare management plans for Public Use sites to identify preservation needs and recommended actions (including, but not limited to, trail reroutes) and interpretive needs (including, but not limited to, signs, interpretive kiosks, and driving guides). • Consider completing NRHP nominations for Public Use sites. • Consider preservation and reuse of historic buildings, as appropriate. • Establish fee sites at Public Use historic architectural sites, as appropriate. Allow for fee waivers for traditional uses.

	Common Management Strategies	Scientific Use Allocation – Management Strategies	Traditional Use Allocation – Management Strategies	Public Use Allocation – Management Strategies
Historic: artifact scatter and artifact scatter with features	<ul style="list-style-type: none"> • Allocate historic artifact scatter sites with or without features that are eligible for or listed in the NRHP to Scientific Use. • Consider allocating historic artifact scatter sites with or without features that are eligible for or listed in the NRHP with evidence of public visitation to Public Use. 	<ul style="list-style-type: none"> • Allow scientific research subject to appropriate research design. • Permit surface collection of artifacts if there is a threat of loss or destruction. • Prepare a historic context report for each resource. 	<ul style="list-style-type: none"> • Document historic context and relevant associations with historically important people and/or events. • Encourage site monitoring by traditional users/public interest groups. 	<ul style="list-style-type: none"> • Prepare management plans for Public Use sites to identify preservation needs and recommended actions (including, but not limited to, detailed in situ artifact identification) and interpretive needs (including, but not limited to, signs, interpretive kiosks, and driving guides). • Establish fee sites at Public Use historic artifact scatter sites with or without features, as appropriate. Allow for fee waivers for traditional uses.
Historic: inscriptions, dendroglyphs, or rock writings	<ul style="list-style-type: none"> • Allocate inscriptions, dendroglyphs, or rock writings eligible for or listed in the NRHP with no evidence of Public Use to Traditional Use and/or Scientific Use. • Do not discharge NRHP-eligible or NRHP-listed inscriptions, dendroglyphs, or rock writings from management. • Conduct condition monitoring of inscriptions, dendroglyphs, or rock writings on at-risk/threatened sites on a periodic basis. • Limit livestock and human contact with inscriptions, dendroglyphs, or rock writings through physical barriers (fences or natural barriers such as plantings or boulder placement). • Allow emergency stabilization if natural or cultural threats are causing a loss of integrity to rock writings. • Evaluate fire potential and remove fuels where there is a threat of loss. • Encourage the use of site stewards for monitoring. • Prioritize identification efforts at Traditional and Public Use sites. 	<ul style="list-style-type: none"> • Limit permitted surface collection of artifacts on non-rock writing portions of sites under ARPA, unless there is a threat of loss or destruction. • Use the best and most accurate technologies available to photograph and gather locational information at all inscriptions, dendroglyphs, or rock writings (for example, 3-D scanning). • Take detailed measured drawings and sub-meter global positioning system locations of all panels. • Allow Scientific Use that causes negligible physical damage to inscriptions, dendroglyphs, or rock writings. 	<ul style="list-style-type: none"> • Document traditional and ongoing uses of inscriptions, dendroglyphs, or rock writings. • Encourage traditional use and visitation to inscriptions, dendroglyphs, or rock writings. • Where possible, provide accessible trails to inscriptions, dendroglyphs, or rock writings. • Encourage site monitoring by traditional users. 	<ul style="list-style-type: none"> • Post informational signs on inscriptions, dendroglyphs, or rock writings etiquette and ARPA at Public Use sites. • In consultation with American Indian Tribes, develop site-specific management plans that include preservation needs and recommended actions and interpretative plans for Public Use inscriptions, dendroglyphs, or rock writings sites. • Consider installing at least one interpretative trail/footpath at each inscriptions, dendroglyphs, or rock writings Public Use site. • Install visitor registers at all Public Use sites. • Establish fee sites at Public Use inscriptions, dendroglyphs, or rock writings sites, as appropriate. Allow for fee waivers for traditional uses.

	Common Management Strategies	Scientific Use Allocation – Management Strategies	Traditional Use Allocation – Management Strategies	Public Use Allocation – Management Strategies
Historic: linear (trail/road, railroad, transmission)	<ul style="list-style-type: none"> • Allocate historic linear sites that are eligible for or listed in the NRHP to Scientific Use. • Consider allocating historic linear sites that are eligible for or listed in the NRHP with potential for public education to Public Use. • Encourage the use of site stewards for monitoring. 	<ul style="list-style-type: none"> • Inventory corridor to identify associated sites and record their condition. • Allow scientific research subject to appropriate research design. • Prepare a historic context report for each resource. 	<ul style="list-style-type: none"> • Document historic context and relevant associations with historically important people and/or events. • Encourage site monitoring by traditional users/public interest groups. 	<ul style="list-style-type: none"> • Post informational signs at major intersections along Public Use sites, as appropriate. • Prepare cultural resource project plans for Public Use sites to identify interpretive needs, including, but not limited to, signs, interpretive kiosks, and driving guides.
Historic: industrial non-architectural (mining and water control)	<ul style="list-style-type: none"> • Allocate historic industrial sites with no architecture that are eligible for or listed in the NRHP to Scientific Use. • Consider allocating historic industrial sites with no architecture that are eligible for or listed in the NRHP with potential for public education to Public Use. • Consider preparing a historic context report for each category of resource. • Encourage the use of site stewards for monitoring. 	<ul style="list-style-type: none"> • Inventory sites to identify associated features and record their condition. • Allow scientific research subject to appropriate research design. • Permit surface collection of artifacts if there is a threat of loss or destruction. • Prepare a historic context report for each category of resource. 	<ul style="list-style-type: none"> • Document historic context and relevant associations with historically important people and/or events. • Encourage site monitoring by traditional users/public interest groups. 	<ul style="list-style-type: none"> • Prepare recreation plans for Public Use sites to identify interpretive needs, including, but not limited to, signs, interpretive kiosks, and driving guides.

APPENDIX F

American Indian Tribal Collaboration Framework



1 IMPROVING AND SUSTAINING TRIBAL RELATIONSHIPS AT BEARS EARS NATIONAL MONUMENT

Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, recognizes the importance of the Bears Ears National Monument (BENM, or Monument) to American Indians and the importance of tribal participation in the future management of the Monument, including the care and protection of important cultural objects. This framework outlines the strategy that the Bureau of Land Management (BLM) and U.S. Forest Service (USFS) will use for closely coordinating with American Indian Tribes as envisioned in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. Section 1 of this document focuses on the establishment of relationships with the American Indian Tribes specifically identified in the Proclamations, although some of these measures may apply to other Tribal entities. Section 2 of this document outlines how the BLM and USFS will work with all American Indian Tribes that have spiritual connections to or cultural affiliation with the area, or that have an interest in the land management decisions related to the BENM.

The BLM and USFS have developed this document with the intent of creating an ongoing two-way dialogue with American Indian Tribes, specifically those named in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. Changes will be made in response to American Indian comments or feedback.

1.1 Building and Maintaining Relationships with American Indian Tribes Identified in the Bears Ears National Monument Proclamations

The BLM and USFS recognize that beyond the formal and legal consultation responsibility the United States has with Tribal governments, the Federal government is committed to pursuing a goal of shared stewardship of lands managed within BENM. The BENM stands out from other monuments in that Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, recognizes the importance of tribal participation in the development of a management plan and the subsequent management of the Monument to ensure the care and protection of Monument objects. Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, notes the establishment of a commission or comparable entity composed of a designated officer from the Hopi Tribe, the Navajo Nation, the Ute Mountain Ute Tribe, the Ute Indian Tribe of the Uintah and Ouray, Zuni Pueblo, and one elected member from the Third District of the San Juan County Commission.

In striving to foster collaboration and cooperation with American Indian Tribes as directed in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, the BLM and USFS recognize the following:

- Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, envisions a new way of working together.
- The value of traditional knowledge and maintaining respectful relationships in furthering shared stewardship of BENM natural and cultural resources. The agencies are committed to working collaboratively with the commission or comparable entity consistent with Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, and law and policy, including Executive Order 13175 “Consultation and Coordination with Indian Tribes” (2000) and BLM Manual MS 1780.

- The importance of working closely with all Tribal governments that attach religious or cultural significance to the BENM or that are otherwise interested in actions occurring within BENM on a government-to-government consultation basis, consistent with consultation law and policy, including Executive Order 13175, the National Historic Preservation Act (NHPA) (54 United States Code [USC] 300101 et seq.), and the National Environmental Policy Act (NEPA) (42 USC 4321 et seq.).
- The value of working together with all interested members of the Tribes, including local American Indian residents, for example, Navajo chapter houses, and the members of the Ute Mountain Ute Tribe living at White Mesa.
- That many governmental entities, organizations, and individuals have an important role in the shared stewardship of the BENM including Federal, Tribal, State, and local governments; local American Indian residents; other Tribal members; other area residents; and public land users.
- That successful collaboration and integration of tribal historical knowledge into future management of the BENM is contingent on the Federal government and the commission or comparable entity being equally willing to take part in Monument organization and administration.

1.2 Partnerships

Federal land managers and agency staff of the BENM should seek out opportunities for partnerships with American Indians. All federal employees of the BENM will work to ensure that the management of the Monument benefits from full engagement with the original stewards of the BENM through such means as cooperative agreements, interagency agreements, contracts, hires, and volunteers.

1.3 Collaborative Land Management

The BLM and USFS, in collaboration with the commission or comparable entity, should identify any programs, functions, services, and activities that self-governance Tribes can assume, as described in the Indian Self-Determination and Education Assistance Act of 1975 and later amendments, regulations, and agency policy associated with this act. Self-determination contracts, also known as “638 contracts,” and negotiated funding agreements to assume programs, functions, services, or activities for the benefit of American Indians because of their status as American Indians are available to use under the discretion of the manager.

The BLM and USFS should engage with Tribal partners to ensure access to and use of sacred sites, as defined in Executive Order 13007. The BLM and USFS should seek to enter into agreements to share capability, expertise, and insight into fostering the collaborative stewardship of sacred sites and other properties of traditional religious and cultural importance.

The BLM and USFS will collaborate with Tribes when developing site-specific protection and management plans that pertain to sacred sites or properties of traditional religious and cultural importance. Site-specific protection and management plans may include procedures for utilizing Tribal expertise and capabilities regarding stabilization, patrolling, interpretation, stewardship education, or ethnographic insights into site use and significance. Federal land managers and American Indian Tribes may formalize site-specific protection and management plans with the completion of an agreement document.

1.3.1 Collaboration with the Commission or Comparable Entity

The BLM and the USFS will work with the commission or comparable entity on the following list of projects, which will include, but are not limited to, the following:

- Execution of an annual or semi-annual BENM summit with the commission or comparable entity to discuss management direction, proposed and ongoing projects, agency and Tribal priorities, research proposals and findings, and other items of importance or significance.
- Routine and ongoing communication (including and as determined necessary weekly, bi-weekly, or monthly meetings) with Tribal leaders or their delegated representatives to discuss regular and continuing administration and management activities.
- Administration of permits for traditional uses, including group events and firewood and seed collecting.
- Development of confidentiality agreements allowing the Tribes to share sensitive cultural resource information that can be used when considering or evaluating projects.
- Identification and listing of traditional cultural properties and other properties on the National Register of Historic Places.
- Access to and protection and use of American Indian sacred sites in accordance with Executive Order 13007.
- Protection of cultural objects currently under the care of the BLM (including in the Cerberus Collection and other BLM-administered collections), and/or USFS, and the development of interpretive and educational materials.
- Work with Tribal governments to establish a comprehensive agreement to assist with efficient repatriation of American Indian human remains and cultural items under the Native American Graves Protection and Repatriation Act.
- Cooperative development of activity-level plans identified in the Monument Management Plans and Environmental Impact Statement including, but not limited to, such items as the cultural resource management plan, camping plan, travel management plan, and sign and interpretation plan.
- Review, prioritization, and input on the selection of research projects funded by the Federal government through various programs including the National Conservation Lands program and federal agency cultural programs.
- Internal review of all project proposals and associated environmental analysis to ensure that American Indian concerns are adequately addressed and that Tribal historical knowledge is adequately taken into consideration.
- Participation in internal scoping efforts, including early issues identification and project design.
- Development and management of volunteer and cooperative agreements with third-party organizations to assist with the implementation of on-the-ground projects, monitoring, and other public education and outreach activities.
- Collaboration with Tribes and agencies to maximize efficiencies for wildfire and fuels-reduction programs. This may include a partnership for initial fire attack and protecting structures, facilities, natural resources, and cultural resources through fuels-reduction projects.
- Review, prioritization, and input on the management of cultural resources including scientific, traditional, conservation, experimental, and public uses.

- Expansion and promotion of employment, volunteer, and internship opportunities for American Indians.
- Enhancement of on-the-ground experiential education and service opportunities for both Tribal and non-Tribal youth groups or organizations.
- Collaboration on issues of general administration, including items such as law enforcement, wildland fire, and the identification, location, and design of future facilities.
- Identification of shared office space, including the location of the commission or comparable entity staff in BENM facilities so there is full integration into Federal agency interdisciplinary teams.

1.4 Procurement

1.4.1 *Small Disadvantaged Businesses*

Federal officials should seek opportunities to utilize contracting opportunities for small business communities. Section 8(a) of the 1958 Small Business Investment Act (15 USC 14A) authorized the Small Business Administration to enter into prime contracts with Federal agencies and to subcontract the performance of the contract to small business concerns. Executive Order 11458, Prescribing Arrangements for Developing and Coordinating a National Program for Minority Business Enterprise (34 Code of Federal Regulations [CFR] 4937), authorized the use of this provision to assist minority businesses and established the 8(a) Program, as it is commonly called. Federal officials should take advantage of Tribal businesses that are eligible as Small Disadvantaged Businesses, an 8(a) participant, or a Historically Underutilized Business Zone. The BLM and USFS should encourage American Indian Tribal firms to bid on upcoming agency contracts for which they qualify. The BLM and USFS may also utilize their discretionary authority to purchase products of Indian Country as outlined in the 1910 Buy Indian Act (25 USC 47) and the regulations found at 48 CFR 1401, 1452, and 1480.

1.4.2 *Contracting for Services, Expertise, or Products Needed for Decision Making*

The BLM and USFS may require land use applicants (e.g., special recreation permit holders) to obtain information from Tribes needed to comply with NEPA or the NHPA. Information may include knowledge about the management of natural resources or cultural resources, such as current or past land use practices, resource utilization, or distribution of natural resources. In addition, the BLM and USFS may contract or pay for Tribes and American Indian individuals to produce reports. The BLM's and USFS's ability to obtain this information may be impossible without the assistance of a Tribe or Tribal representative. Tribes have occupied lands near or utilized portions of the BENM for long periods of time. Their insights into past land conditions and the impacts of human use and occupation on this ecosystem extends back in time for hundreds of years. Thus, their knowledge of natural and human interactions on this landscape may be obtained by the BLM and USFS working in collaboration with the commission or comparable entity through the following methods:

- Studies on visitor use and the management of Monument objects
- Studies on utilizing traditional ecological knowledge for the management of Monument objects
- Studies on traditional, public, and scientific uses of Monument objects, including, but not limited to, prehistoric sites, rock writings, artifact scatters, sacred sites, and traditional cultural properties

- Studies on promoting access for religious and traditional uses
- Studies on sustainable firewood collection based on modern use and ethnographic accounts
- Studies on traditional building skills, technology, art, place names, and subsistence
- Ethnographic reports, National Register of Historic Places nominations, or other specific information regarding historic properties, trails, sacred sites, and landscapes
- Studies on the location, habitat, condition, and trend of important plant and animal species including ethnobotanical species

1.5 Human Resources

The BLM and USFS will collaborate with the commission or comparable entity on the development of American Indian recruitment programs. Although the BLM and USFS do not utilize American Indian preference in hiring, the agencies do allow self-identification for employment statistics. Internship opportunities for Tribal youth and partnerships offer additional opportunities to bolster American Indian employment while facilitating mutually supported projects. Providing educational opportunities and employment to Tribal members is a powerful demonstration of a Federal commitment to establishing positive, long-term working relationships with Tribes.

1.5.1 Education

The BLM and USFS will negotiate cooperative agreements with Tribes in the field of education and employment. The agencies will seek out partnerships with American Indian educational institutions to assist in the development of curricula or implementing cooperative education programs. Programs such as Project Archaeology would enable the agencies and Tribes to develop curricula and lesson plans that strengthen science competencies and interests that American Indian youth have in resource management careers. Agency officials may also seek out fully accredited Tribal colleges and universities to provide practical experiences and opportunities for their students. The BLM, USFS, and Tribal colleges can partner to establish research projects and facilitate involvement with land management issues of the BENM.

1.5.2 Training Opportunities

All Federal employees working in the BENM should complete the most recent training courses on Tribal relations. The BLM and USFS should invite Tribes to attend and participate in agency training courses related to NEPA, lands, rights-of-way, cadastral surveys, wildfire and fuels management, and heritage resources. Holding periodic joint training courses may familiarize BENM staff members with Tribal cultural and governmental structure, and familiarize Tribal leaders and staff members with the USFS's and BLM's legal authorities, missions, histories, and programs. Training courses should be tailored to address issues in the BENM. Both Federal employees and Tribes can benefit from a greater understanding of how Federal programs can be coordinated with Tribal government programs. As funding allows, the BLM and USFS may send Tribal staff to off-location trainings at locations such as the BLM's National Training Center. Access to BLM and USFS online training courses should be made known to Tribes. The dialogue and multicultural perspectives that result from such exchanges enhance relationships in the BENM.

Federal employees of the BLM and USFS should take advantage of cultural awareness training sponsored by Tribes when and where they are available. Such classes strengthen the staff's understanding and appreciation of Tribal traditional, cultural, and religious values, as well as

treaties and other Tribally reserved rights on Federal lands. Managers should encourage BENM staff to attend gatherings sponsored by Tribal entities, Tribal consortiums, or nonprofit organizations offering specialized knowledge and addressing issues important to Tribes. The BLM and USFS may also co-host workshops with Tribes concerning Tribal relationships, traditional cultures, and consultation. Presentations may include traditional technologies and crafts, a mutual understanding of traditional use areas, cultural landscapes, and the full scope of Tribal interests.

1.5.3 Financial Support for Tribal Participation in Monument Land Management Decision Making

At the discretion of Authorized Officer (BLM)/Line Officer (USFS), funding may be provided to Tribes to facilitate their participation in the NEPA and NHPA processes under several circumstances (see BLM Manual MS-1780, Section 1.6.B, and H-1780-1, Appendix 2; see also Forest Service Manual 1563.15). It should be noted that this compensation policy allows for compensation but does not mandate it. Such compensation for consultation is not legally required; however, the BLM and USFS have the authority to provide it directly under certain circumstances or require that the compensation needed to acquire information necessary for the agency to make decisions regarding land use applications or authorizations be provided by third parties. The agencies may utilize its own appropriated funds or cost-reimbursable accounts to reimburse Tribal members for travel expenses to attend meetings in connection with NEPA, the Federal Land Policy and Management Act, or NHPA Section 106 processes, or for time taken to discuss proposed projects, cultural resource site management, or traditional use areas. (See the Advisory Council on Historic Preservation Memorandum, Fees in the Section 106 Review Process, dated July 6, 2001, available at: <http://www.achp.gov/feesin106.pdf>.)

1.5.4 Employee Performance

Federal employees working in the BENM that are routinely engaged in collaborative management with the commission or comparable entity will be evaluated regarding their efforts to build Tribal relationships and carry out effective consultation. BLM and USFS managers and staff will do the following:

- Seek opportunities to develop ongoing partnerships with the Tribes to ensure that land use decisions reflect effective collaboration, including engagement of the commission or comparable entity, early in the decision making process. Decisions should include documentation on how Tribal issues and concerns were taken into account.
- Facilitate Tribal access for Tribal religious and traditional uses; maintain a professional staff that is capable of carrying out timely and effective collaboration and that seeks out and establishes educational, training, interpretive, contracting, fire, and cadastral programs of joint interest and benefit to Tribes and the agencies.
- Take steps to fully utilize information provided by Tribes regarding traditional uses, access concerns, and resource issues and protects such sensitive information to the extent allowed by law from public disclosure.
- Personally participate in discussions with the commission or comparable entity and establish professional relationships with Tribal governments, appointed delegates or representatives, and delegated Tribal staff in an effort to facilitate long-term, positive partnerships involving land management, resource protection, and economic development.

2 TRIBAL CONSULTATION GENERAL CONSIDERATIONS

This section includes information on how the BLM and USFS will consult with American Indian Tribes not specifically identified in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. The BLM and USFS will also follow these general procedures when consulting with Tribes identified in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, as required by Federal laws requiring government-to-government consultation, such as the NHPA.

2.1 General Aspects of Consultation

2.1.1 Roles - Federal Official

Government-to-government consultation requires the participation of the BLM and/or USFS manager and the Tribal chairperson or other representative official designated by the Tribal chair or council. The authority for consultation may be delegated through the BENM manager to the lowest practical level. However, the agency manager who delegates or re-delegates authority does not divest himself or herself of the power to exercise that authority, nor does the delegation or re-delegation relieve that official of the responsibility for actions taken pursuant to the delegation.

2.1.2 Roles - Staff

BLM and USFS program specialists and staff members play an invaluable role in gathering information and briefing the agency manager on issues affecting Tribal relations. They provide professionally sound information, recommendations, and advice regarding the Tribes' traditional and ongoing uses of public lands, practices and beliefs, locations and uses of importance on public lands, and other information necessary for consultation. They interact frequently with their Tribal counterparts within Tribal governments to facilitate compliance with laws and regulations requiring Tribal consultation and input into Federal decision making. Staff members often arrange consultation meetings and meet with Tribal staff to discuss issues once the agency manager and Tribal officials decide it is time to consult on a matter. They obtain and share data needed for decision making. They may identify opportunities for cooperative agreements or other proactive relationships in the fields of education, outreach, and research with Tribes. They play key roles in contracting and managing sensitive information. Agency staff members cannot, however, represent the BLM or USFS in government-to-government interactions.

2.1.3 Roles - Third Parties

Contractors cannot negotiate, make commitments, or otherwise give the appearance of exercising the BLM's or USFS's authority in consultations. Therefore, as a general rule, consulting firms working for land use applicants may be approved by the agency to carry out the following limited and restricted activities to facilitate consultation:

- Gathering and analyzing data
- Preparing reports
- Arranging meetings
- Facilitating field trip logistics
- Managing the compilation of data and records as part of the administrative record

Although these steps are helpful, the BLM and USFS ultimately retain the responsibility to consult with American Indian Tribes on a government-to-government basis. It cannot be transferred by the agencies to other entities.

2.1.4 Identifying Tribes for Consultation

Specific consultation should focus on Tribes known to have concerns about the BENM area under consideration and the Monument objects, natural resources, cultural resources, and/or land uses involved. In addition, nonresident Tribes with historic ties should be given the same opportunities as resident Tribes to identify their selected contact persons and their issues and concerns regarding public lands.

2.1.5 Points of Contact within Tribes

For each Tribe, the BLM and USFS should develop and maintain current lists of the following:

- Tribal officials (e.g., chairperson, president, council members, etc.)
- Appropriate staff contacts for specific programs and issues (e.g., energy development, natural resources, lands, cadastral surveys, economic development, Tribal Historic Preservation Offices, etc.)
- Traditional cultural or religious leaders
- Lineal descendants of deceased American Indian individuals whose remains are discovered on public lands or are in Federal possession or control

2.1.6 Multitribal Organizations

Official Tribal consultation takes place as part of government-to-government relationships between the BLM and/or USFS and individual federally recognized Tribes. However, Tribal relationships can also be enhanced through the development of positive working relationships with Tribal consortiums.

2.2 Methods of Consultation

Agency managers should determine Tribal preferences for information sharing and consultation. Agency managers and staff should consider meeting with Tribes in their areas after each agency office's annual work plan has been prepared for the Monument. Regularly scheduled meetings can accomplish several important things:

- Agency managers and staff can identify and briefly explain actions planned for the coming year and can describe any additional land use proposals that are foreseeable on public lands or lands that may be affected by BENM decisions.
- A Tribe can identify proposed actions or geographical areas that it is concerned about and about which it would like to be consulted at a later date. The Tribe might also identify actions or geographical areas for which it feels no need to be consulted.
- For some proposed actions, agency managers and staff and the Tribe can agree to follow expedited or tailored consultation procedures to resolve scheduling conflicts, meet project time frames, or accommodate the special needs of the people involved.
- A Tribe can use the meeting as an opportunity to identify persons it recognizes as traditional leaders or religious practitioners. The Tribe can also identify specific proposed actions, kinds of actions, or geographical areas about which these individuals should be consulted.

Information coming out of these meetings may form the basis of consultation agreements or memoranda of understanding that can define the manner in which Tribes prefer that future consultation take place, areas or actions the Tribes wish to discuss in the future, or specific natural or heritage resources Tribes wish to be consulted about whenever proposed actions might affect them. Regular periodic meetings can be an effective means for maintaining a constructive ongoing intergovernmental relationship.

2.2.1 When and with Whom to Consult

Table 1 indicates the types of American Indian Tribal officials and/or individuals with whom the BLM and USFS are obligated to consult.

Table 1. Tribal Consultation Guidance

Whom to Consult	National Historic Preservation Act	Archaeological Resources Protection Act	Native American Graves Protection and Repatriation Act	Federal Land Policy and Management Act	National Environmental Policy Act	American Indian Religious Freedom Act	Executive Order 13007
Tribal representative whom the Tribal government has designated for this purpose	X	X	X ¹	X	X	X	X
Lineal descendant of an identified American Indian individual			X ²				
Traditional religious leader			X ³			X ³	
Appropriately authoritative representative of an American Indian religion							X ³

¹ American Indian Tribes also consulted.

² Lineal descendants (who need not be Tribal members) have legal precedence for repatriation and custody.

³ A Tribal government may designate a “traditional religious leader” or an “authoritative representative” as the Tribe’s representative for consultation under the American Indian Religious Freedom Act or Executive Order 13007. Under the Native American Graves Protection and Repatriation Act, a traditional religious leader is a person recognized by Tribal members as responsible for performing certain cultural or religious duties or a leader of the Tribe or organization’s cultural, ceremonial, or religious practices, as defined in 43 CFR 10.2(d)(3).

2.2.2 Coordinating Consultation across Administrative and Jurisdictional Boundaries

The BLM and USFS managers responsible for the Monument should seek partnership opportunities to jointly meet with Tribes to discuss land management issues relevant to both agencies and multiple Tribes.

2.2.3 Preparing and Initiating Tribal Consultation

When it becomes apparent that the nature and/or location of an activity could affect American Indian Tribal issues or concerns, the BENM manager should initiate appropriate consultation with the potentially affected Tribes as soon as possible once the proposed project-specific land use decision has been developed. Although land use planning is the best time to identify landscape-scale issues and other broad Tribal concerns, the BLM and USFS must address Tribal concerns when approving specific land use authorizations and making other decisions, such as revising significant policies, rules, and regulations.

2.3 Consultation Guidelines for Selected Authorities

2.3.1 Consultation Guidelines for the National Historic Preservation Act

The BLM and USFS responsibilities for compliance with Section 106 of the NHPA, including Tribal consultation, are triggered by a proposed undertaking. Tribal consultation as part of the Section 106 process is driven by and focused on a specific undertaking. While the agencies must conduct Tribal consultation as part of the Section 106 process, this consultation is focused on historic properties only and does not satisfy the agencies obligations to consult with Tribes on other issues potentially raised by a proposed action or program.

2.3.2 Consultation Guidelines for the National Environmental Policy Act

For NEPA purposes, the agency manager consults with elected Tribal officials or Tribal representatives(s) whom the Tribal government has designated for this purpose. The purpose of consultation is to identify a proposed action's potential to conflict with Tribal members' uses of the environment for cultural, religious, and economic purposes and to seek alternatives that would resolve potential conflicts. Tribal consultation may begin before public notice, including when pre-application meetings occur. This early consultation may be initiated by providing Tribes the opportunity to add comments to the project-specific identification team NEPA checklists. Tribal consultation should continue throughout the NEPA process.

For Environmental Assessments and Environmental Impact Statements, consultation should occur at the formation of the proposed action, when alternatives are formulated, an assessment of impacts is projected, and analysis documents are published, before the final decision is rendered.

The NEPA document must fully disclose Tribal issues and provide a summary of Tribal consultation in order to demonstrate that Tribal concerns have been heard and their positions considered. As is fitting for the special Federal-Tribal relationship, Tribal issues and recommendations should be fully discussed and addressed in relevant sections of the text within the NEPA document rather than as an appendix to the discussion of cultural and archaeological resources. The following is a list of relevant sections where these discussions could occur:

- **Scoping and issues.** Include a specific discussion of scoping issues raised by Tribes.
- **Affected environment.** Include a section that introduces those Tribes with interests in the project and identifies resources or issues of significance to them.
- **Alternatives.** Discuss how Tribal issues shaped the alternatives considered.
- **Environmental impacts.** Address impacts, including cumulative effects, to Tribal concerns and refer to more detailed discussions in other sections, such as impacts to water or biological or botanical resources of Tribal significance.

If a categorical exclusion is completed, the agency should take care to consider whether or not the proposed action covered by the categorical exclusion involves "extraordinary circumstances" relating to impacts to American Indian religious concerns or impacts to resources of concern to American Indian Tribes. If, for any reason, a NEPA document will not be prepared, an appropriate non-NEPA document should be used to substantiate identification and consideration of American Indian Tribal concerns and places of importance. Such non-NEPA documentation may consist of Federal-Tribal consultation logs, inventory reports, and data recovery reports, among others. These documents should be maintained and housed with the administrative record for the project.

A number of strategies should be discussed with Tribes during consultation associated with the NEPA process to protect resources and access issues of importance to the tribes. Mitigation measures analyzed in the NEPA document may include, but are not limited to, the following:

- Attaching measures to use authorizations to protect resources of importance to Tribes and accommodate their use. For example, in certain situations, ceremonial places can be screened from view by planting vegetation or installing temporary visual barriers. Intrusive developments can be hidden or painted to blend with the environment.
- Moving competing uses. Conflicting activities and uses can be shifted to other areas or scheduled for other times.
- Removing incompatible facilities. Disturbed ground surfaces and vegetation can be restored. Vehicle use can be restricted. Livestock can be managed. Vandalism can be reduced by law enforcement patrols and site steward monitoring. Tribes can probably also suggest additional measures.
- Including Tribes in project planning and utilizing their input to design specifications for access, parking, trails, interpretive signs, and other visitor developments. Tribal consultation in several states has resulted in Tribal input into the text and artwork on interpretive signs at rock writing sites. Such consultation improves relationships with Tribes by partnering on the interpretation of a site reflecting their cultural traditions and enhances the interpretive experience of all visitors.
- Consulting with Tribal governments to collaboratively identify means of reducing or avoiding impacts.
- Issuing special use permits to address conflicts.
- Negotiating memoranda of understanding to facilitate access and use.
- Specifying the appropriate treatment of accidental finds such as archaeological sites or human remains resulting from project activities or natural erosion processes. This anticipation can include developing a comprehensive agreement or a plan of action related to the Native American Graves Protection and Repatriation Act.

Where Tribal concerns are appropriately addressed through the NHPA Section 106 process, as in the consideration of historic properties with traditional and religious significance, the NEPA document should reference the outcome of the Section 106 process.

2.3.3 Consultation Guidelines for the American Indian Religious Freedom Act

For the purposes of complying with the American Indian Religious Freedom Act, the BENM manager should consult with elected officials or Tribal representative(s) and/or American Indian traditional religious leaders whom the Tribal government has designated or identified for this purpose. The purpose of consultation is to identify the potential for land management procedures to conflict with American Indians' religious observances and to seek alternatives that would resolve the potential conflicts.

Case law has established that the American Indian Religious Freedom Act has an ongoing implementation requirement, obligating agencies to consult with Tribal officials and Tribal religious leaders when agency actions would abridge the Tribe's religious freedom by 1) denying access to sacred sites required in their religion, 2) prohibiting the use and possession of sacred objects necessary to the exercise of religious rites and ceremonies, or 3) intruding upon or interfering with ceremonies. The American Indian Religious Freedom Act focuses not just on religious places but

also on religious practices, or religious activities, and it directs agencies to consider both places and practices before taking actions that could affect Tribes. The BENM manager must examine proposed actions and authorizations as well as routine management practices that could substantially restrict access or interfere with the free exercise of religion.

2.3.4 Consultation Guidelines for Executive Order 13007, Indian Sacred Sites

For the purposes of complying with Executive Order 13007, the agency manager should consult with elected officials or Tribal representative(s) and/or appropriately authoritative representative of an American Indian religion whom the Tribal government has identified for this purpose. The purpose of consultation is to do the following:

- Determine whether proposed land management actions would
 - accommodate American Indian religious practitioners' access to and ceremonial use of American Indian sacred sites on Federal lands, and/or
 - avoid adversely affecting the physical integrity of American Indian sacred sites on Federal lands.
- Seek alternatives that would resolve potential conflicts.

Aside from a few exceptional cases where well-known physical markers are present, only Tribal representatives have the knowledge needed to identify a Tribe's sacred sites. A Tribe may name an appropriately authoritative representative of an American Indian religion to provide this information. Agency officials cannot know to accommodate access to and ceremonial use of American Indian sacred sites, and to avoid adversely affecting them, unless the Tribe identifies them. Identification can only occur by consultation. In some cases, a Tribe may be reluctant to tell the BLM and USFS where a site is located, because the agencies cannot protect that information or because the site may no longer be sacred if its location is revealed. In such cases, the agency manager should ask if there is a broader area that should be protected, within which there may be a sacred site.

APPENDIX G

Recreation and Visitor Services Management Framework



1 INTRODUCTION

Outcome-focused management is an approach to recreation management that focuses on the positive outcomes gained from engaging in recreational experiences. The following tables outline the goals, objectives, and targeted outcomes that the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) intend for the Bears Ears National Monument (BENM, or Monument) Shash Jáa and Indian Creek Units (Planning Area).

2 SHASH JÁA SPECIAL RECREATION MANAGEMENT AREA¹

2.1 Outcome-Focused Recreation Objectives

- Provide world-class recreation opportunities while protecting the objects and values of BENM and supporting a growing travel and tourism economy in the region.
- Manage for the specific targeted outcomes—activities, experiences, and benefits—in Table 1, with 80% of visitors reporting realization of targeted experiences and benefits.
- Maintain and enhance a range of recreation settings, from primitive/backcountry² to rural/frontcountry.³
- Provide the opportunity for visitors to experience cultural resources within both a directed and interpreted setting, as well as an undeveloped setting to allow a sense of discovery.
- Interpret the objects and values of BENM as described by Presidential Proclamation 9558, as modified by Presidential Proclamation 9681: cultural resources, current cultural uses and the spiritual significance of the area, geology, paleontology, native plants, wildlife, and grazing.
- Manage recreation within the BENM Shash Jáa Unit as consistently and compatibly as possible between the agencies to provide a mostly seamless visitor experience.

Desired recreation settings include additional and enhanced visitor facilities within the Comb Ridge area of the Special Recreation Management Area (SRMA), resulting in a frontcountry physical setting. In addition, the desired operational setting is more frontcountry in the Comb Ridge area with increased visitor services and management controls to provide the opportunity for visitors to experience cultural resources in a more directed and interpreted setting. There is no desired change to recreation settings in other areas, which generally provide visitors with an undeveloped setting to experience cultural resources and allow for a sense of discovery.

¹ Special Recreation Management Areas (SRMAs) apply to BLM-administered lands, but the USFS will use SRMAs as a conceptual framework for managing recreation on USFS-administered lands within the Monument.

² On USFS-administered lands “backcountry” is defined as an area that lies beyond 0.25 mile of roads and bridges. In these areas, visitors are more interested in opportunities that feature solitude, self-reliance, a sense of remoteness, and a primitive setting. On BLM-administered lands, backcountry is not mapped.

³ On USFS-administered lands “frontcountry” is defined as an area that lies within 0.25 mile of roads and bridges. These areas offer easy access to the national forest where visitors are more tolerant of interaction with others as long as at-one-time use does not overwhelm the natural setting or create high levels of crowding and congestion. On BLM-administered lands, frontcountry is not mapped.

Table 1. Shash Jáa Special Recreation Management Area (areas outside of Recreation Management Zones and Wilderness Study Areas) Existing and Desired Recreation Settings

PHYSICAL – Qualities of the Landscape		
	Existing	Desired
Remoteness	Primitive to Frontcountry: Areas range from more than 0.5 mile from motorized routes (primitive) to within a 0.5 mile of well-maintained, unpaved passenger vehicle routes (frontcountry).	No change
Naturalness	Primitive to Middlecountry: Natural landscapes range from undisturbed areas (primitive) to areas where the character of the natural landscape is retained but a few modifications including fences, stock ponds, and parking areas contrast with the character of the landscape (middlecountry).	No change
Visitor facilities	Primitive to Middlecountry: Some areas have no facilities (primitive) while others have maintained and marked trails and basic trailhead developments (middlecountry).	No change except for the Comb Ridge area where Frontcountry rustic facilities such as campsites, toilets, trailheads, and interpretive kiosks would be present.
SOCIAL – Qualities Associated with Use		
	Existing	Desired
Average contacts	Primitive to Backcountry: Contacts range from fewer than six encounters/day on travel routes on average (primitive) in some areas and 7–15 encounters/day on travel routes (backcountry) in other areas.	Allow for increased visitor use; monitor for impacts and limit access to specific sites if necessary.
Average group size	Primitive to Backcountry: Group sizes range from fewer than three people per group (primitive) in some areas to four to six people per group (backcountry) in other areas.	Allow for increased visitor use; monitor for impacts and limit access to specific sites if necessary.
Evidence of use	Primitive to Middlecountry: Evidence of use ranges from no alteration to natural terrain and rare sounds of people (primitive) to small areas of alteration where surface vegetation is showing wear or gone and the sounds of people can occasionally be heard.	No change
OPERATIONAL – Conditions Created by Management and Controls over Recreation Use		
	Existing	Desired
Public access	Primitive to Frontcountry: Access ranges from foot and horse access only (primitive) to 2WD passenger vehicles (frontcountry).	No change
Visitor services	Primitive: No maps or brochures available onsite and staff are rarely present to provide onsite assistance.	No change except for the Comb Ridge area where Middlecountry visitor services would be provided such as onsite area information and maps, staff occasionally present to provide on-site assistance
Management controls	Middlecountry: Some regulatory and ethics signs. There are moderate use restrictions and group size limits in some areas.	Frontcountry: Rules, regulations and ethics clearly posted. Use restrictions and limitations in sensitive areas.

Table 2. Shash Jáa Special Recreation Management Area Objectives

Primary Activities		
Cultural site visitation	OHV riding	Education and interpretation
Hiking	Backpacking	Heritage tourism
Camping		
Experiences		
Visitor		
Achievement/stimulation	Developing skills and abilities, gaining a greater sense of self-confidence, telling others about the trip	
Autonomy/leadership	Enjoying exploring on own	
Family/group togetherness	Enjoying the closeness of friends and family, group affiliation, and togetherness; meeting new people with similar interests; and participating in group outdoor events	
Learning and teaching	Learning and teaching others about the specific cultural history of the area, current cultural uses and the spiritual significance of the area, the objects and values of BENM, and outdoor resource protection skills	
Enjoying nature	Enjoying the total sensory (sight, sound, and smell) experience of a natural landscape; enjoying easy access to natural landscapes	
Introspection	Enjoying the ability to be more contemplative, reflecting on own character and personal values, thinking about and shaping own spiritual values, contemplating humans' relationship with the land	
Exercise/physical fitness	Enjoying physical exercise	
Escaping personal/social/physical pressures	Releasing or reducing stress; escaping everyday responsibilities; enjoying solitude, isolation, and independence; enjoying an escape from crowds	
Community Resident		
Lifestyle	Enjoying access to close-to-home outdoor opportunities, enjoying the peace and quiet of small-town communities, avoiding compromising the quality of life in the area	
Sense of place	Feeling that the area is a special place to live; enjoying the cultural, spiritual, traditional, and familial connection to the natural and cultural landscapes	
Interacting with people	Encouraging visitors to help safeguard residents' lifestyle and quality of life, sharing cultural heritage with new people, seeing visitors become excited about the area, communicating cultural heritage with those already living in the area	
Stewardship and hospitality	Feeling good about the way the cultural heritage is being protected, how visitors are being managed, how natural resources and facilities are being managed, and how the area is being used and enjoyed	
Benefits		
Personal	Better mental health and health maintenance, personal development and growth, personal appreciation and satisfaction, improved physical fitness and health maintenance	
Household and community	Greater household and community awareness of and appreciation for cultural heritage, improved functioning of individuals in family and community, greater family bonding, more well-rounded childhood development, reduced numbers of at-risk youth, lifestyle improvement or maintenance, enhance lifestyle, greater interaction with visitors from different cultures, greater community valuation of its ethnic diversity	
Economic	Reduced health maintenance costs, increased work productivity, improved local-regional economic stability, increased local job opportunities, increased local tourism revenue, greater diversification of local job offerings, greater fiscal capability to maintain and provide essential infrastructure and services	
Environmental	Maintenance of the distinctive character of the recreation setting; improved maintenance of physical facilities; reduced looting and vandalism of historic/prehistoric sites; reduced negative human impacts such as litter, vegetative trampling, unplanned trails, and human waste; greater community ownership and stewardship of area; greater retention of distinctive cultural landscape; greater protection of area archaeological sites; sustainability of community's cultural heritage; increased awareness and protection of specific objects and values of BENM; general increased awareness and protection of cultural and natural landscapes	

2.2 Trail of the Ancients Recreation Management Zone

2.2.1 Outcome-Focused Recreation Objectives

- Manage for the specific targeted outcomes—activities, experiences, and benefits—listed in Tables 3 and 4, with 80% of visitors reporting realization of the targeted experiences and benefits.

Desired recreation settings include additional and enhanced visitor facilities within the Recreation Management Zone (RMZ), resulting in a more rural physical setting than the existing recreation setting. The desired operational setting is frontcountry, with increased visitor services and management controls to provide the opportunity for visitors to experience cultural resources in a more directed and interpreted setting.

Table 3. Trail of the Ancients Recreation Management Zone Existing and Desired Recreation Settings

PHYSICAL – Qualities of the Landscape		
	Existing	Desired
Remoteness	Frontcountry/Rural: Areas within 0.5 mile of passenger vehicle routes (frontcountry). Areas within 0.5 mile of highway (rural)	No change
Naturalness	Frontcountry: Character of the natural landscape partially modified but none overpower the natural landscape	No change
Visitor facilities	Frontcountry: Camping areas, developed trailheads, toilets, interpretive displays	Rural: Developed campgrounds, visitor contact station
SOCIAL – Qualities Associated with Use		
	Existing	Desired
Average contacts	Backcountry: Seven to 15 encounters/day on travel routes.	Allow for increased visitor use; monitor for impacts and limit access to specific sites if necessary.
Average group size	Backcountry: Four to six people in group.	Allow for increased visitor use; monitor for impacts and limit access to specific sites if necessary.
Evidence of use	Frontcountry: Many small areas of alteration where surface vegetation is showing wear or gone. Sounds of people regularly heard.	No change
OPERATIONAL – Conditions Created by Management and Controls over Recreation Use		
	Existing	Desired
Public access	Frontcountry/Rural: Two-wheel-drive vehicles and ordinary highway auto and truck traffic characteristic	No change
Visitor services	Backcountry: Basic brochure, staff infrequently present to provide on-site assistance	Frontcountry: Provide more on-site interpretive information materials and kiosks, staff present frequently to provide on-site assistance.
Management controls	Middlecountry: Some regulatory and ethics signs. Moderate use restrictions.	Frontcountry: Rules, regulations and ethics clearly posted. Use restrictions and limitations.

Table 4. Trail of the Ancients Recreation Management Zone Objectives

Primary Activities		
Cultural site visitation	Backpacking (Alternatives C and D only)	Education and interpretation
Hiking	Camping	Heritage tourism
Experiences		
Visitor		
Achievement/stimulation	Developing skills and abilities, gaining a greater sense of self-confidence, telling others about the trip	
Family/group togetherness	Enjoying the closeness of friends and family, group affiliation, and togetherness; meeting new people with similar interests; and participating in group outdoor events	
Learning and teaching	Learning and teaching others about the specific cultural history of the area, current cultural uses and spiritual significance of the area, the objects and values of BENM, and outdoor resource protection skills	
Enjoying nature	Enjoying the total sensory (sight, sound, and smell) experience of a natural landscape, enjoying easy access to natural landscapes	
Introspection	Enjoying the ability to be more contemplative; reflecting on own character and personal values, thinking about and shaping own spiritual values, contemplating humans' relationship with the land	
Exercise/physical fitness	Enjoying physical exercise	
Escaping personal/social/physical pressures	Releasing or reducing stress, escaping everyday responsibilities	
Community Resident		
Lifestyle	Enjoying access to close-to-home outdoor opportunities, enjoying the peace and quiet of small-town communities, avoiding compromising the quality of life in the area	
Sense of place	Feeling that the area is a special place to live; enjoying the cultural, spiritual, traditional, and familial connection to the natural and cultural landscapes	
Interacting with people	Encouraging visitors to help safeguard residents' lifestyle and quality of life, sharing cultural heritage with new people, seeing visitors become excited about the area, communicating cultural heritage with those already living in the area	
Stewardship and hospitality	Feeling good about the way cultural heritage is being protected, how visitors are being managed, how natural resources and facilities are being managed, and how the area is being used and enjoyed	
Benefits		
Personal	Better mental health and health maintenance, personal development and growth, personal appreciation and satisfaction, improved physical fitness and health maintenance	
Household and community	Greater household and community awareness of and appreciation for cultural heritage, improved functioning of individuals in family and community, greater family bonding, more well-rounded childhood development, reduced numbers of at-risk youth, lifestyle improvement or maintenance, enhance lifestyle, greater interaction with visitors from different cultures, greater community valuation of its ethnic diversity	
Economic	Reduced health maintenance costs, increased work productivity, improved local-regional economic stability, increased local job opportunities, increased local tourism revenue, greater diversification of local job offerings, greater fiscal capability to maintain and provide essential infrastructure and services	
Environmental	Maintenance of the distinctive character of the recreation setting; improved maintenance of physical facilities; reduced looting and vandalism of historic/prehistoric sites; reduced negative human impacts such as litter, vegetative trampling, unplanned trails, and human waste; greater community ownership and stewardship of area; greater retention of distinctive cultural landscape; greater protection of area archaeological sites; sustainability of community's cultural heritage; increased awareness and protection of specific objects and values of BENM; general increased awareness and protection of cultural and natural landscapes	

2.3 Arch Canyon Recreation Management Zone

2.3.1 Outcome-Focused Recreation Objectives

- Manage for the specific targeted outcomes—activities, experiences, and benefits—in Tables 5 and 6, with 80% of visitors reporting realization of the targeted experiences and benefits.
- Alternative B: Maintain and enhance non-motorized recreation use in the area and minimize conflict between recreation use and protection of the objects and values of BENM.
- Alternative C: Maintain and enhance motorized and non-motorized recreation use in the area, excluding the final 0.5 mile of the current designated route, within 0.5 mile of the USFS boundary. In the 0.5-mile area, create an area closed to OHVs and rehabilitate the road to protect known Mexican spotted owl habitat.
- Alternative D: Maintain and enhance motorized and non-motorized recreation use in the area and minimize conflict between recreation use and protection of the objects and values of BENM.

Desired recreation settings include enhanced visitor facilities within the RMZ, resulting in a middlecountry physical setting. Under Alternative B, remoteness and public access would be primitive due to less motorized access. The desired operational setting is frontcountry, with increased visitor services and management controls. Desired visitor service enhancements are minimal, and this will generally maintain an undeveloped recreation setting for visitors to experience cultural resources and allow for a sense of discovery.

Table 5. Arch Canyon Recreation Management Zone Existing and Desired Recreation Settings

PHYSICAL – Qualities of the Landscape		
	Existing	Desired
Remoteness	Middlecountry: Within 0.5 mile of 4WD route	No change (Alt C and D) Primitive (Alt B)
Naturalness	Middlecountry: Character of the natural landscape retained. A few modifications including fences and parking areas contrast with the character of the landscape	No change
Visitor facilities	Backcountry: Simple trailhead developments and information kiosks	Middlecountry: Maintained and marked trails, enhanced interpretive and information kiosks
SOCIAL – Qualities Associated with Use		
	Existing	Desired
Average contacts	Primitive: Fewer than six encounters/day on travel routes on average	Allow for increased visitor use; monitor for impacts and limit access to specific sites if necessary.
Average group size	Backcountry: Four to six people in group	Allow for increased visitor use; monitor for impacts and limit access to specific sites if necessary.
Evidence of use	Middlecountry: Small areas of alteration where surface vegetation is showing wear or gone, including motorized routes, social foot trails, and trailhead areas	No change

OPERATIONAL – Conditions Created by Management and Controls over Recreation Use		
	Existing	Desired
Public access	Middlecountry: 4WD vehicle, OHV, mechanized, foot, and equestrian access	No change (Alt C and D) Primitive (Alt B)
Visitor services	Primitive: No maps or brochures available onsite. Staff rarely present to provide onsite assistance	Middlecountry: Area information and maps onsite, staff occasionally present to provide on-site assistance
Management controls	Middlecountry: User regulations at key access points, some regulatory and ethics signs, camping and human waste restrictions	Frontcountry: Rules, regulations, and ethics clearly posted. Use restrictions and limitations

Table 6. Arch Canyon Recreation Management Zone Objectives

Primary Activities		
Cultural site visitation	OHV riding (Alternatives C and D only)	Education and interpretation
Hiking (Alternative B only)	Backpacking (Alternative B only)	Heritage tourism
Camping		
Experiences		
Visitor		
Achievement/stimulation	Developing skills and abilities, gaining a greater sense of self-confidence, telling others about the trip	
Autonomy/leadership	Enjoying exploring on own	
Family/group togetherness	Enjoying the closeness of friends and family, group affiliation, and togetherness; meeting new people with similar interests; and participating in group outdoor events	
Learning and teaching	Learning and teaching others about the specific cultural history of the area, current cultural uses and spiritual significance of the area, the objects and values of BENM, and outdoor resource protection skills	
Enjoying nature	Enjoying the total sensory (sight, sound, and smell) experience of a natural landscape, enjoying easy access to natural landscapes	
Introspection	Enjoying the ability to be more contemplative, reflecting on own character and personal values, thinking about and shaping own spiritual values, contemplating humans' relationship with the land	
Exercise/physical fitness	Enjoying physical exercise	
Escaping personal/social/physical pressures	Releasing or reducing stress; escaping everyday responsibilities; enjoying solitude, isolation, and independence; enjoying an escape from crowds	
Community Resident		
Lifestyle	Enjoying access to close-to-home outdoor opportunities, enjoying peace and quiet of small-town communities, avoiding compromising the quality of life in the area	
Sense of place	Feeling that the area is a special place to live; enjoying the cultural, spiritual, traditional, and familial connection to the natural and cultural landscapes	
Interacting with people	Encouraging visitors to help safeguard residents' lifestyle and quality of life, sharing cultural heritage with new people, seeing visitors become excited about the area, communicating cultural heritage with those already living in the area	
Stewardship and hospitality	Feeling good about the way cultural heritage is being protected, how visitors are being managed, how natural resources and facilities are being managed, and how the area is being used and enjoyed	

Benefits	
Personal	Better mental health and health maintenance, personal development and growth, personal appreciation and satisfaction, improved physical fitness and health maintenance
Household and community	Greater household and community awareness of and appreciation for cultural heritage, improved functioning of individuals in the family and community, greater family bonding, more well-rounded childhood development, reduced numbers of at-risk youth, lifestyle improvement or maintenance, enhance lifestyle, greater interaction with visitors from different cultures, greater community valuation of its ethnic diversity
Economic	Reduced health maintenance costs, increased work productivity, improved local-regional economic stability, increased local job opportunities, increased local tourism revenue, greater diversification of local job offerings, greater fiscal capability to maintain and provide essential infrastructure and services
Environmental	Maintenance of the distinctive character of the recreation setting; improved maintenance of physical facilities; reduced looting and vandalism of historic/prehistoric sites; reduced negative human impacts such as litter, vegetative trampling, unplanned trails, and human waste; greater community ownership and stewardship of area; greater retention of distinctive cultural landscape; greater protection of area archaeological sites; sustainability of community's cultural heritage; increased awareness and protection of specific objects and values of BENM; general increased awareness and protection of cultural and natural landscapes

2.4 McLoyd Canyon-Moon House Recreation Management Zone

2.4.1 Outcome-Focused Recreation Objectives

- The McLoyd Canyon-Moon House RMZ is based on its accessibility and the unique architecture of the Moon House site. From a scientific perspective, Moon House is world renowned—unique to the region—and is a significant cultural treasure. Restrictions and management prescriptions are intended to minimize conflicts between recreational use and protection of the objects and values of BENM.
- Manage for the specific targeted outcomes—activities, experiences, and benefits—in Tables 7 and 8, with 80% of visitors reporting realization of the targeted experiences and benefits.

Desired recreation settings include enhanced visitor services to provide the opportunity for visitors to experience cultural resources in a more directed and interpreted setting.

Table 7. McLoyd Canyon-Moon House RMZ Existing and Desired Recreation Settings

PHYSICAL – Qualities of the Landscape		
	Existing	Desired
Remoteness	Middlecountry: Within 0.5 mile of 4WD route	No change
Naturalness	Primitive: Undisturbed natural landscape	No change
Visitor facilities	Primitive: Developed trail made mostly of native materials	No change
SOCIAL – Qualities Associated with Use		
	Existing	Desired
Average contacts	Primitive: Fewer than six encounters/day on travel routes on average	No change
Average group size	Backcountry: Four to six people in group	No change
Evidence of use	Backcountry: Areas of alteration uncommon. Surface vegetation showing wear or gone on foot trails.	No change

OPERATIONAL – Conditions Created by Management and Controls over Recreation Use

	Existing	Desired
Public access	Primitive: Foot travel only	No change
Visitor services	Middlecountry: Staff occasionally present to provide on-site assistance.	Frontcountry: Provide more interpretive information materials, staff present frequently to provide on-site assistance.
Management controls	Rural: Regulations strict and ethics prominent. Use limited by a permit and reservation system.	No change

Table 8. McLoyd Canyon-Moon House Recreation Management Zone Objectives

Primary Activities	
Cultural site visitation	Education and interpretation
Hiking	Heritage tourism
Experiences	
Visitor	
Achievement/stimulation	Developing skills and abilities, gaining a greater sense of self-confidence, telling others about the trip
Family/group togetherness	Enjoying the closeness of friends and family, group affiliation, and togetherness; meeting new people with similar interests; and participating in group outdoor events
Learning and teaching	Learning and teaching others about the specific cultural history of the area, current cultural uses and the spiritual significance of the area, the objects and values of BENM, and outdoor resource protection skills
Enjoying nature	Enjoying the total sensory (sight, sound, and smell) experience of a natural landscape, enjoying easy access to natural landscapes
Introspection	Enjoying the ability to be more contemplative, reflecting on own character and personal values, thinking about and shaping own spiritual values, contemplating humans' relationship with the land
Exercise/physical fitness	Enjoying physical exercise
Escaping personal/social/physical Pressures	Releasing or reducing stress; escaping everyday responsibilities; enjoying solitude, isolation, and independence; enjoying an escape from crowds
Community Resident	
Lifestyle	Enjoying access to close-to-home outdoor opportunities, enjoying the peace and quiet of small-town communities, avoiding compromising the quality of life in the area
Sense of place	Feeling that the area is a special place to live; enjoying cultural, spiritual, traditional, and familial connection to natural and cultural landscapes
Interacting with people	Encouraging visitors to help safeguard residents' lifestyle and quality of life, sharing cultural heritage with new people, seeing visitors become excited about the area, communicating cultural heritage with those already living in the area
Stewardship and hospitality	Feeling good about the way the cultural heritage is being protected, how visitors are being managed, how natural resources and facilities are being managed, and how the area is being used and enjoyed

Benefits	
Personal	Better mental health and health maintenance, personal development and growth, personal appreciation and satisfaction, improved physical fitness and health maintenance
Household and community	Greater household and community awareness of and appreciation for cultural heritage, improved functioning of individuals in family and community, greater family bonding, more well-rounded childhood development, reduced numbers of at-risk youth, lifestyle improvement or maintenance, enhance lifestyle, greater interaction with visitors from different cultures, greater community valuation of its ethnic diversity
Economic	Reduced health maintenance costs, increased work productivity, improved local-regional economic stability, increased local job opportunities, increased local tourism revenue, greater diversification of local job offerings, greater fiscal capability to maintain and provide essential infrastructure and services
Environmental	Maintenance of the distinctive character of the recreation setting; improved maintenance of physical facilities; reduced looting and vandalism of historic/prehistoric sites; reduced negative human impacts such as litter, vegetative trampling, unplanned trails, and human waste; greater community ownership and stewardship of area; greater retention of distinctive cultural landscape; greater protection of area archaeological sites; sustainability of community's cultural heritage; increased awareness and protection of specific objects and values of BENM; general increased awareness and protection of cultural and natural landscapes

2.5 San Juan Hill Recreation Management Zone

2.5.1 Outcome-Focused Recreation Objectives

- Manage for the specific targeted outcomes—activities, experiences, and benefits—in Tables 9 and 10, with 80% of visitors reporting realization of the targeted experiences and benefits.
- Manage for heritage tourism, traditional cultural values, and cultural site visitation while minimizing conflict between multiple recreation uses and between recreation use and protection of the object and values of BENM.

Desired recreation settings include additional and enhanced visitor facilities within the RMZ, resulting in a middlecountry physical setting. The desired operational setting is middlecountry, with improved visitor services. Desired visitor facility and service enhancements are minimal and will generally maintain an undeveloped setting for visitors to experience cultural resources and allow for a sense of discovery.

Table 9. San Juan Hill Recreation Management Zone Existing and Desired Recreation Settings

PHYSICAL – Qualities of the Landscape		
	Existing	Desired
Remoteness	Middlecountry: Within 0.5 mile of 4WD route.	No change
Naturalness	Middlecountry: Character of the natural landscape retained. A few modifications including fences and parking areas contrast with the character of the landscape.	No change
Visitor facilities	Backcountry: Simple trailhead developments and information kiosks.	Middlecountry: Maintained and marked trails, enhanced interpretive and information kiosks

SOCIAL – Qualities Associated with Use		
	Existing	Desired
Average contacts	Primitive: Fewer than 6 encounters/day on travel routes on average	Allow for increased visitor use; monitor for impacts and limit access to specific sites if necessary.
Average group size	Middlecountry: 7-12 people in group.	Allow for increased visitor use; monitor for impacts and limit access to specific sites if necessary.
Evidence of use	Middlecountry: Small areas of alteration where surface vegetation is showing wear or gone, including Motorized routes, social foot trails, and trailhead areas.	No change

OPERATIONAL – Conditions Created by Management and Controls over Recreation Use		
	Existing	Desired
Public access	Middlecountry: 4WD vehicle access, river access	No change
Visitor services	Backcountry: Basic brochure, staff infrequently present to provide on-site assistance	Middlecountry: Area information and maps onsite, staff occasionally present to provide on-site assistance
Management controls	Middlecountry: User regulations at key access points (river), some regulatory and ethics signs, camping and human waste restrictions	No change

Table 10. San Juan Hill Recreation Management Zone Objectives

Primary Activities		
Cultural site visitation	Camping	Education and interpretation
Hiking	OHV riding	Heritage tourism

Experiences	
Visitor	
Achievement/stimulation	Developing skills and abilities, gaining a greater sense of self-confidence, being able to tell others about the trip
Autonomy/leadership	Enjoying exploring on own
Family/group togetherness	Enjoying closeness of friends and family, group affiliation and togetherness, meeting new people with similar interests, and participation in group outdoor events
Learning and teaching	Learning and teaching others about the specific cultural history of the area, current cultural uses and spiritual significance of the area, the objects and values of BENM, and outdoor resource protection skills
Enjoying nature	Enjoying the total sensory (sight, sound, and smell) experience of a natural landscape, enjoying easy access to natural landscape.
Introspection	Enjoying ability to be more contemplative; reflecting on own character and personal values; thinking about and shaping own spiritual values; contemplating human's relationship with the land
Exercise/physical fitness	Enjoying physical exercise
Escaping personal/social/physical pressures	Releasing or reducing stress; escaping everyday responsibilities

Community Resident	
Lifestyle	Enjoying access to close-to-home outdoor opportunities; enjoying peace and quiet of small-town communities; avoiding compromising the quality of life in the area
Sense of place	Feeling that the area is a special place to live; enjoying cultural, spiritual, traditional, and familial connection to natural and cultural landscapes
Interacting with people	Encouraging visitors to help safeguard resident lifestyle and quality of life; sharing cultural heritage with new people; seeing visitors become excited about the area; communicating cultural heritage with those already living in the area
Stewardship and hospitality	Feeling good about the way cultural heritage is being protected, how visitors are being managed, how natural resources and facilities are being managed, and how the area is being used and enjoyed
Benefits	
Personal	Better mental health and health maintenance; personal development and growth; personal appreciation and satisfaction; improved physical fitness and health maintenance
Household and community	Greater household and community awareness of and appreciation for cultural heritage; improved functioning of individuals in family and community; greater family bonding; more well-rounded childhood development; reduced numbers of at-risk youth; lifestyle improvement or maintenance; enhance lifestyle; greater interaction with visitors from different cultures; greater community valuation of its ethnic diversity
Economic	Reduced health maintenance costs; increased work productivity; improved local-regional economic stability; increased local job opportunities; increased local tourism revenue; greater diversification of local job offerings; greater fiscal capability to maintain and provide essential infrastructure and services
Environmental	Maintenance of distinctive recreation setting character; improved maintenance of physical facilities; reduced looting and vandalism of historic/prehistoric sites; reduced negative human impacts such as litter, vegetative trampling, unplanned trails, and human waste; greater community ownership and stewardship of area; greater retention of distinctive cultural landscape; greater protection of area archaeological sites; sustainability of community's cultural heritage; increased awareness and protection of specific objects and values of BENM; general increased awareness and protection of cultural and natural landscapes

3 INDIAN CREEK SPECIAL RECREATION MANAGEMENT AREA

3.1 Outcome-Focused Recreation Objectives

- Provide world class recreation opportunities while protecting the objects and values of BENM and supporting a growing travel and tourism economy in the region.
- Manage for the specific targeted outcomes; activities, experiences, and benefits in Table 1 with 80% of visitors reporting realization of the targeted experiences and benefits.
- Maintain and enhance a range of recreation settings from primitive/backcountry to rural/frontcountry.
- Provide the opportunity for visitors to experience cultural resources within a directed and interpreted setting, as well as an undeveloped setting to allow a sense of discovery
- Interpret the objects and values of BENM as described by Presidential Proclamation 9558, as modified by Presidential Proclamation 9681: cultural resources, current cultural uses and spiritual significance of the area, geology, paleontology, native plants, wildlife, and grazing.

Desired recreation settings include additional and enhanced visitor facilities in the highway corridor area of the SRMA, resulting in a frontcountry or rural physical setting. In addition, the desired operational setting is frontcountry in the highway corridor area, with increased visitor services and management controls to provide the opportunity for visitors to experience cultural resources in a

more directed and interpreted setting. There is no desired change to recreation settings in other areas, which generally provide visitors with an undeveloped setting to experience cultural resources, to allow for a sense of discovery.

Table 11. BENM-Indian Creek Special Recreation Management Area Existing and Desired Recreation Settings

PHYSICAL – Qualities of the Landscape		
	Existing	Desired
Remoteness	Primitive to Rural: Areas range from more than 0.5 mile from motorized routes (primitive) to within a 0.5 mile of highways (rural)	No change
Naturalness	Primitive to Frontcountry: Natural landscapes range from undisturbed areas (primitive) to areas where the character of the natural landscape is partially modified but modifications don't overpower the natural landscape	No change
Visitor facilities	Primitive to Rural: Some areas have no facilities (primitive) while others have campgrounds, toilets, information kiosks, and parking areas.	No change except that additional frontcountry and rural level visitor facilities would be provided in the highway corridor area and additional frontcountry facilities (rustic toilets, campsites) would be provided in Cottonwood Wash area.
SOCIAL – Qualities Associated with Use		
	Existing	Desired
Average contacts	Primitive to Frontcountry: Contacts range from fewer than 6 encounters/day on travel routes on average (primitive) in some areas and 30 or more encounters/day on travel routes (frontcountry) in other areas.	Allow for increased visitor use; monitor for impacts and limit access to specific sites if necessary.
Average group size	Primitive to Backcountry: Group sizes range from fewer than 3 people per group (primitive) in some areas and 4-6 people per group (backcountry) in other areas	Allow for increased visitor use; monitor for impacts and limit access to specific sites if necessary.
Evidence of use	Primitive to Frontcountry: Evidence of use ranges from no alteration to natural terrain and sounds of people rare (primitive) to small areas of alteration prevalent where surface vegetation is showing wear or gone and the sounds of people can regularly be heard.	No change
OPERATIONAL – Conditions Created by Management and Controls over Recreation Use		
	Existing	Desired
Public access	Primitive to Frontcountry: Access ranges from foot and horse access only (primitive) to 2WD passenger vehicles (frontcountry)	No change
Visitor services	Primitive to Frontcountry: Visitor services range from no maps of brochures available onsite and staff rarely present to provide onsite assistance (primitive) to information materials describe recreation areas and activities and staff periodically present.	No change: additional Frontcountry level visitor services would be provided in the highway corridor area
Management controls	Middlecountry: Some regulatory and ethics signs. Moderate use restrictions (e.g. camping, human waste) in some areas.	Frontcountry: Rules, regulations and ethics clearly posted. Use restrictions and limitations in sensitive areas

Table 12. BENM - Indian Creek SRMA Objectives

Primary Activities		
Rock climbing	OHV riding	Education and interpretation
Cultural site visitation	Hiking	Heritage tourism
Camping	Sightseeing	
Experiences		
Visitor		
Achievement/stimulation	Developing skills and abilities; gaining a greater sense of self-confidence; being able to tell others about the trip	
Autonomy/leadership	Enjoying exploring on own	
Family/group togetherness	Enjoying closeness of friends and family, group affiliation and togetherness, meeting new people with similar interests, and participation in group outdoor events	
Learning and teaching	Learning and teaching others about the specific cultural history of the area; current cultural uses and spiritual significance of the area; the objects and values of BENM; and outdoor resource protection skills	
Enjoying nature	Enjoying the total sensory (sight, sound, and smell) experience of a natural landscape; enjoying easy access to natural landscapes	
Introspection	Enjoying ability to be more contemplative, reflecting on own character and personal values, thinking about and shaping own spiritual values, contemplating human's relationship with the land	
Exercise/physical fitness	Enjoying physical exercise	
Escaping personal/social/physical pressures	Releasing or reducing stress; escaping everyday responsibilities; enjoying solitude, isolation, and independence; enjoying an escape from crowds of people	
Community Resident		
Lifestyle	Enjoying access to close-to-home outdoor opportunities, enjoying peace and quiet of small-town communities, avoiding compromising the quality of life in the area	
Sense of place	Feeling that the area is a special place to live; enjoying cultural, spiritual, traditional, and familial connection to natural and cultural landscapes	
Interacting with people	Encouraging visitors to help safeguard resident lifestyle and quality of life, sharing cultural heritage with new people, seeing visitors become excited about the area, communicating cultural heritage with those already living in the area	
Stewardship and hospitality	Feeling good about the way cultural heritage is being protected, how visitors are being managed, how natural resources and facilities are being managed, and how the area is being used and enjoyed	
Benefits		
Personal	Better mental health and health maintenance, personal development and growth, personal appreciation and satisfaction, improved physical fitness and health maintenance	
Household and community	Greater household and community awareness of and appreciation for cultural heritage, improved functioning of individuals in family and community, greater family bonding, more well-rounded childhood development, reduced numbers of at-risk youth, lifestyle improvement or maintenance, enhance lifestyle, greater interaction with visitors from different cultures, greater community valuation of its ethnic diversity	
Economic	Reduced health maintenance costs, increased work productivity, improved local-regional economic stability, increased local job opportunities, increased local tourism revenue, greater diversification of local job offerings, greater fiscal capability to maintain and provide essential infrastructure and services	
Environmental	Maintenance of distinctive recreation setting character; improved maintenance of physical facilities; reduced looting and vandalism of historic/prehistoric sites; reduced negative human impacts such as litter, vegetative trampling, unplanned trails, and human waste; greater community ownership and stewardship of area; greater retention of distinctive cultural landscape; greater protection of area archaeological sites; sustainability of community's cultural heritage; increased awareness and protection of specific objects and values of BENM; general increased awareness and protection of cultural and natural landscapes	

4 INDIAN CREEK EXTENSIVE RECREATION MANAGEMENT AREA

4.1 Outcome-Focused Recreation Objectives

- Support and sustain principle recreation activities, including the following:
 - Camping
 - Cultural site visitation
 - OHV riding
 - Hiking
 - Hunting
 - Sightseeing
- Protect the objects and values of BENM.
- Maintain undeveloped physical and operational recreation settings.
- Provide minimal facilities when necessary for protection of objects and values and for visitor health and safety.

5 U.S. FOREST SERVICE RECREATION MANAGEMENT ZONES DESIRED FUTURE CONDITIONS

5.1 Arch Canyon Semi-Primitive Non-Motorized Area

- The zone is managed for non-motorized use. Uses include hiking and equestrian trails. Any facilities would be small scale and rustic in nature. The zone is managed to provide opportunities for exploration, challenge, and self-reliance and opportunities to experience dark skies and quiet areas.
- Ecological processes such as fire, insects, and disease are the primary factors affecting landscape patterns within these areas.
- Seasonal or permanent restrictions on human use may be applied to provide for the protection of physical, biological, or social resources.
- Resource management activities such as timber harvest, livestock grazing, wildlife habitat improvement, vegetative treatments, mineral exploration and development, and special uses may occur as long as they meet Scenery Management System (SMS) objectives and maintain a high quality semi-primitive non-motorized recreation opportunity.
- Sounds of motorized use are generally not heard from the core of semi-primitive non-motorized areas.
- The zone contains the Arch Canyon Inventoried Roadless Area, which will be managed consistent with the 2001 Roadless Rule.

5.2 The Points Semi-Primitive Motorized Areas

This zone is a backcountry area used by motorized users on designated routes. Roads are maintained for high-clearance vehicles. The zone offers motorized opportunities for exploration, challenge, and self-reliance. Any facilities are small scale and rustic in nature. This area provides a portal into the adjacent Arch Canyon Semi Primitive Non-Motorized Area.

5.3 The South Elks/Bears Ears Roaded Natural Zone

This zone is a frontcountry recreation area that is accessed by open system roads that can accommodate sedan travel. Facilities are less rustic and more developed (campgrounds, trailheads, on-site interpretation of cultural sites, etc.). Recreation development in the Monument on USFS lands would be focused here. This zone provides an access point for the adjacent Semi-Primitive Motorized setting found in the Points Semi-Primitive Motorized Areas.

APPENDIX H

Best Management Practices for Raptors and Their Associated Habitats in Utah



1 INTRODUCTION

Raptors, or birds of prey, are found on public lands throughout Utah. Approximately 31 species of raptors utilize public lands for at least a portion of their life cycle. These include 20 diurnal raptors, including the eagles, hawks, falcons, osprey, turkey vulture, and California condor, and 11 mostly nocturnal owl species. At least 16 of the diurnal raptors are known to nest, roost, and forage on public lands while two others are probable nesters within the southern part of the State. The California condor is known to utilize public lands for roosting and foraging but is not currently known to nest within the State. The rough-legged hawk is a winter resident that uses public lands for foraging. All of the owl species nest, roost, and forage on public lands in Utah.

Some of Utah's raptors are considered to be Special Status Species by the Bureau of Land Management (BLM) or U.S. Forest Service (USFS) and currently receive enhanced protection, in addition to the regulatory authority provided by the Migratory Bird Treaty Act (MBTA), which covers all raptor species. The Mexican spotted owl is Federally listed as a threatened species and is afforded the protection, as well as the Section 7 consultation requirements, of the Endangered Species Act (ESA). Both the bald eagle and golden eagle are protected by the provisions of the Eagle Protection Act. The California condor is Federally listed as an endangered species; however, the birds found in southern Utah are part of an Experimental Non-essential Population reintroduced to northern Arizona under Section 10(j) of the ESA. The BLM and USFS are required to treat the condor as a species proposed for listing for Section 7 purposes of the ESA. The northern goshawk is managed by a multi-agency Conservation Agreement and is also a USFS-sensitive species. The ferruginous hawk, short-eared owl, and burrowing owl are listed as Wildlife Species of Concern by the Utah Division of Wildlife Resources (UDWR) (2015), and they are therefore recognized as BLM sensitive species under the BLM's 6840 Manual. The BLM's 6840 Manual states that the "*BLM shall. . .ensure that actions authorized, funded, or carried out. . .do not contribute to the need for the species to become listed.*" USFS Manual 2670 directs the USFS to "*Develop and implement management practices to ensure that species do not become threatened or endangered because of Forest Service actions*".

Future raptor management on BLM and USFS lands in the BENM will be guided by the use of these best management practices (BMPs), which are BLM-specific recommendations for implementation of the U.S. Fish and Wildlife Service (USFWS) Utah Field Office's "*Guidelines for Raptor Protection from Human and Land Use Disturbances*" (Guidelines) (USFWS 2002). The Guidelines were originally developed by the USFWS in 1999 and were updated in 2002 to reflect changes brought about by court and policy decisions and to incorporate Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*. The Guidelines were provided to the BLM and other land management agencies in an attempt to provide raptor management consistency while ensuring project compatibility with the biological requirements of raptors and encouraging an ecosystem approach to habitat management.

These BMPs, or specific elements of the BMPs that pertain to a proposal, should be attached as Conditions of Approval (COA) to all BLM and USFS use authorizations that have the potential to adversely affect nesting raptors or would cause occupied nest sites to become unsuitable for nesting in subsequent years.

Raptor management is a dynamic and evolving science and, consequently, as the science evolves these BMPs will undergo subsequent revision. As more information becomes available through implementation of these raptor BMPs and as our knowledge of raptor life cycle requirements increases, findings will be incorporated into future revisions of the BMP document. Additionally, the BLM and the Department of Energy are initiating a 3-year raptor radii study that will test traditional spatial and seasonal nest buffers during actual oil and gas development activities for a select suite of species. Study results would be incorporated into new BMP revisions as well.

To adequately manage raptors and their habitats, and to reduce the likelihood of a raptor species being listed under the ESA, BLM- and USFS-authorized or proposed management activities and/or land-disturbing actions would be subject to the criteria and processes specified within these BMPs. The implementation of raptor spatial and seasonal buffers under the BMPs would be consistent with Table 2 of the Guidelines, included here as Attachment 2. As specified in the Guidelines, modifications of spatial and seasonal buffers for BLM- and USFS-authorized actions would be permitted, so long as protection of nesting raptors was ensured. State- and/or Federally listed, proposed, and candidate raptor species, as well as BLM-sensitive raptor species, should be afforded the highest level of protection through this BMP process; however, all raptor species would continue to receive protection under the MBTA. Modification of the buffers for threatened or endangered species would be considered pending results of Section 7 consultation with the USFWS.

As stated in the Guidelines, spatial and seasonal buffers should be considered as the best available recommendations for protecting nesting raptors under a wide range of activities State-wide. However, they are not necessarily site-specific to proposed projects. Land managers should evaluate the type and duration of the proposed activity, the position of topographic and vegetative features, the sensitivity of the affected species, the habituation of breeding pairs to existing activities in the proposed project area, and the local raptor nesting density when determining site-specific buffers. The BLM and USFS would be encouraged to informally coordinate with the UDWR and USFWS any time a site-specific analysis shows that an action may have an adverse impact on nesting raptors. The coordination would determine if the impact could be avoided or must be mitigated, and if so, to determine appropriate and effective mitigation strategies.

Potential modifications of the spatial and seasonal buffers identified in the Guidelines may provide a viable management option. Modifications would ensure that nest protection would occur while allowing various management options that may deviate from the suggested buffers within the Guidelines, which, if adequately monitored, could provide valuable information for incorporation into future management actions.

Seasonal raptor buffers from Attachment 2 should be reviewed by local raptor nesting authorities who are knowledgeable of raptor nesting chronologies within their local area. For those nesting raptors for which local nesting chronologies remain uncertain, the seasonal buffers provided in Attachment 2 should serve as the default. However, for those raptor species whose known nesting chronologies differ from the seasonal buffers provided in Attachment 2, the local seasonal buffers may be utilized as a modification of the Guidelines.

Criteria that would need to be met prior to implementing modifications to the spatial and seasonal buffers in the Guidelines would include the following:

- Completion of a site-specific assessment by a wildlife biologist or other qualified individual. See example (Attachment 1).
- Written documentation by the BLM Field Office or USFS Ranger District Wildlife Biologist, identifying the proposed modification and affirming that implementation of the proposed modification(s) would not affect nest success or the suitability of the site for future nesting. Modification of the Guidelines would not be recommended if it is determined that adverse impacts to nesting raptors would occur or that the suitability of the site for future nesting would be compromised.
- Development of a monitoring and mitigation strategy by a BLM or USFS biologist or other raptor biologist. Impacts of authorized activities would be documented to determine if the modifications were implemented, as described in the environmental documentation or COAs, and were adequate to protect the nest site. Should adverse impacts be identified

during monitoring of an activity, the BLM would follow an appropriate course of action, which may include cessation or modification of activities that would avoid, minimize, or mitigate the impact or, with the approval of the UDWR and USFWS, the BLM could allow the activity to continue while requiring monitoring to determine the full impact of the activity on the affected raptor nest. A monitoring report would be completed and forwarded to the UDWR for incorporation into the Natural Heritage Program (NHP) raptor database.

In a further effort to provide additional support and expertise to local BLM and USFS field biologists, a network of biologists from various agencies with specific expertise in raptor management has been identified and included as Attachment 3. The personnel identified have extensive backgrounds in raptor management issues and are available, upon request, to assist BLM and USFS field biologists on a case-by-case basis. Field biologists are encouraged to use this network, via informal conference, with one or more of the individuals identified. This coordination should be clearly distinguished from the consultation process required under Section 7 of the ESA. Individuals on the expert panel should not be expected to provide formal advice but should serve as a sounding board for discussing potential effects of a proposal, as well as potential mitigation measures on specific projects which may be useful to BLM and USFS biologists.

2 Habitat Enhancement

As recommended in the Guidelines, raptor habitat management and enhancement, both within and outside of buffers, would be an integral part of these BMPs, with the understanding that in order for raptors to maintain high densities and maximum diversity, it is necessary that the habitat upon which they and their prey species depend be managed to promote healthy and productive ecosystems. Habitat loss or fragmentation would be minimized and/or mitigated to the extent practical and may include such measures as drilling multiple wellheads per pad, limiting access roads and avoiding loop roads to well pads, effective rehabilitation or restoration of plugged and abandoned well locations and access roads that are no longer required, rehabilitation or restoration of wildland fires to prevent domination by non-native invasive annual species, vegetation treatments and riparian restoration projects to achieve Rangeland Health Standards, etc.

In some cases, artificial nesting structures, located in areas where preferred nesting substrates are limited but where prey base populations are adequate and human disturbances are limited, may enhance some raptor populations or may serve as mitigation for impacts occurring in other areas.

3 Protection of Nest Sites and Buffer Zones

As stated in the Guidelines, protection of both occupied and unoccupied nests is important since not all raptor pairs breed every year, nor do they always utilize the same nest within a nesting territory. Individual raptor nests left unused for a number of years are frequently reoccupied, if all the nesting attributes which originally attracted a nesting pair to a location are still present. Nest sites are selected by breeding pairs for the preferred habitat attributes provided by that location.

Raptor nest buffer zones are established for planning purposes because the nest serves as the focal point for a nesting pair of raptors. The buffer should serve as a threshold of potential adverse effect to nest initiation and productivity. Actions proposed within these buffer zones are considered potentially impacting and therefore trigger the need for consideration of site-specific recommendations.

Seasonal (temporal) buffer zones are conservation measures intended to schedule potentially impacting activities to periods outside of the nesting season for a particular raptor species. These seasonal limitations are particularly applicable to actions proposed within the spatial buffer zone of a nest for short-duration activities such as pipeline or power line construction, seismic exploration activity, vegetative treatments, fence or reservoir construction, permitted recreational events, etc., where subsequent human activity would not be expected to occur.

Spatial buffer zones are those physical areas around raptor nest sites where seasonal conservation measures or surface occupancy restrictions may be applied, depending on the type and duration of activity, distance and visibility of the activity from the nest site, adaptability of the raptor species to disturbance, etc. Surface occupancy restrictions should be utilized for actions which would involve human activities within the buffer zone for a long duration (more than one nesting season) and which would cause an occupied nest site to become unsuitable for nesting in subsequent years.

3.1 Unoccupied Nests

All Activities, Including All Mineral Leases: Surface-disturbing activities occurring outside of the breeding season (seasonal buffer) but within the spatial buffer would be allowed during a minimum 3-year nest monitoring period, as long as the activity would not cause the nest site to become unsuitable for future nesting, as determined by a wildlife biologist. Facilities and other permanent structures would be allowed, if they meet the above criteria. Occupied and unoccupied eagle nests are protected under the Bald and Golden Eagle Protection Act. Occupied and unoccupied eagle nests cannot be legally removed unless a permit is issued by the USFWS.

Some examples of typical surface-disturbing actions occurring outside of the seasonal buffer, which may not be expected to affect nest production or future nesting suitability, would include pipelines, power lines, seismographic exploration, communication sites, an oil or gas well with off-site facilities which does not require routine visitation, recreation events, fence or reservoir construction, vegetative treatments, and other actions with discrete starting and ending times and for which subsequent human activity or heavy equipment operation within the spatial buffer would not be expected to occur, or could be scheduled outside of the seasonal buffer in subsequent years.

Surface-disturbing activities that would be expected to potentially affect nest production or nest site suitability include oil and gas facilities requiring regular maintenance, sand and gravel operations, road systems, wind energy projects, mining operations, other actions requiring continual, random human activity, or heavy equipment operation during subsequent nesting seasons.

A nest site which does not exhibit evidence of use, such as greenery in the nest, fresh whitewash, obvious nest maintenance, or the observed presence of adults or young at the nest, for a period of 3 consecutive years (verified through monitoring), would be deemed abandoned, and all seasonal and spatial restrictions would cease to apply to that nest. All subsequent authorizations for permanent activities within the spatial buffer of the nest could be permitted. If the nest becomes reoccupied after authorized activities are completed, conservation measures would be considered to reduce potential adverse effects and to comply with the MBTA and the Eagle Protection Act.

The 3-year non-use standard varies from the Guidelines suggested 7-year non-use standard before declaring nest abandonment. This variation is based upon a similar standard which has been applied for over 20 years in two administrative areas within Utah. Empirical evidence would suggest that the 3-year non-use standard has been effective in conserving raptor species. The 3-year standard has been applied without legal challenge or violation of “take” under the MBTA or the Eagle Protection Act.

Because prey base populations are known to be cyclic, and because raptor nest initiation or nesting success can be affected by drought and other random natural events, care should be taken when applying the 3-year non-activity standard. The 3-year nest occupancy monitoring requirement should be viewed as a minimum time period during those years of optimal raptor nesting conditions. During suboptimal raptor nesting years, when nesting habitat may be affected by drought, low prey base populations, fire, or other events, the monitoring standard should be increased to allow raptors the opportunity to reoccupy nesting sites when nesting conditions become more favorable.

3.2 Occupied Nests

All Activities: Land use activities which would have an adverse impact on an occupied raptor nest, would not be allowed within the spatial or seasonal buffer.

4 Consideration of Alternatives and Mitigation Measures

Alternatives, including denial of the proposal, should be identified, considered, and analyzed in a National Environmental Policy Act (NEPA) document any time an action is proposed within the spatial buffer zone of a raptor nest. Selection of a viable alternative that avoids an impact to nesting raptors should be selected over attempting to mitigate those impacts. If unavoidable impacts are identified, mitigation measures should be applied as necessary to mitigate adverse impacts of resource uses and development on nesting raptors. Monitoring of the effectiveness of the mitigation measures should be mandatory and should be included as a COA.

5 Specific Strategies to Be Implemented Regarding Other Resource Uses

The following are management strategies designed to reduce or eliminate potential conflicts between raptors and other resource uses. This is a list of examples and is not intended to be an all-inclusive list. In all cases, when an activity on BLM or USFS lands is proposed, and a NEPA document developed, the site-specific analysis process identified in Attachment 1 may be implemented to identify and either avoid or mitigate impacts to raptors from the proposal. These strategies apply to BLM-, USFS-, and applicant-generated proposals.

5.1 Cultural Resources

Excavation and studies of cultural resources in caves and around cliff areas should be delayed until a qualified biologist surveys the area to be disturbed or impacted by the activity for the presence of raptors or nest sites. If nesting raptors are present, the project should be rescheduled to occur outside of the seasonal buffer recommended by the Guidelines.

5.2 Forestry and Harvest of Woodland Products

Timber harvest would be subject to NEPA analysis and would be conducted in a manner that would avoid impacts to raptor nests. This could also apply to areas identified for wood gathering and firewood sales.

5.3 Hazardous Fuel Reduction/Habitat Restoration Projects

Hazardous fuel reduction projects and shrub-steppe restoration projects should be reviewed for possible impacts to nesting raptors. Removal of trees containing either stick nests or nesting cavities, through prescribed fire or mechanical or manual treatments, should be avoided.

It is important to note that certain raptor species are tied to specific habitat types, and that consideration must be made on a site-specific basis when vegetation manipulation projects are proposed, to determine which raptor species may benefit and which may be negatively affected by the vegetation composition post- treatment.

5.4 Livestock Grazing

Rangelands and riparian areas should be managed in a manner that promotes healthy, productive rangelands and functional riparian systems. Rangeland Health Assessments should be conducted on each grazing allotment, and rangeland guidelines should be implemented where Rangeland Health Standards are not being met, to promote healthy rangelands.

Locations of sheep camps and other temporary intrusions would be located in areas away from raptor nest sites during the nesting season. Placement of salt and mineral blocks would also be located away from nesting areas.

Season of use, kind of livestock, and target utilization levels of key species affect vegetative community attributes (percent cover, composition, etc.) and influence small mammal and avian species diversity and density. While not all raptor species would be affected in the same way, livestock management practices which maintain or enhance vegetative attributes, will preserve prey species density and diversity which will benefit the raptor resource.

5.5 Off-Highway Vehicle Use

Special Recreation Management Areas (SRMA) that are developed for off-highway vehicle (OHV) use would not be located in areas that have important nesting, roosting, or foraging habitat for raptors.

OHV use would be limited to designated roads, trails, and managed open areas. Lands categorized as “Open” for OHV use should not be in areas important to raptors for nesting, roosting, and foraging.

When proposals for OHV events are received, the area to be impacted would be surveyed by a qualified wildlife biologist to determine if the area is utilized by raptors. Potential conflicts would be identified and either avoided or mitigated prior to the issuance of any permit.

5.6 Realty

Lands proposed for disposal which includes raptor nesting, roosting, or important foraging areas would be analyzed and evaluated for the relative significance of these resources before a decision is made for disposal or retention.

A priority list of important raptor habitat areas, especially for Federally listed or State sensitive raptor species, on State and private lands should be developed and utilized as lands to be acquired by the BLM or USFS when opportunities arise to exchange or otherwise acquire lands.

Lands and realty authorizations would include appropriate conservation measures to avoid and/or mitigate impacts to raptors.

5.7 Recreation

Development of biking trails near raptor nesting areas would be avoided.

Rock climbing activities would be authorized only in areas where there are no conflicts with cliff-nesting raptors.

In high recreation use areas where raptor nest sites have been made unsuitable by existing disturbance or habitat alteration, mitigation should be considered to replace nest sites with artificial nest structures in nearby suitable habitat, if it exists, and consider seasonal protection of nest sites through fencing or other restrictions.

Dispersed recreation would be monitored to identify where this use may be impacting nesting success of raptors.

6 BLM Inventory and Monitoring

Each Field Office should cooperatively manage a raptor database, with the UDWR and USFWS, as part of the BLM Corporate database. Raptor data should be collected and compiled utilizing the Utah Raptor Data Collection Standards developed by the Utah State Office, so that personnel from other agencies can access the data. Appropriate protocols for survey and monitoring should be followed, when available. This database should be updated as new inventory and monitoring data becomes available. The data should also be forwarded to the UDWR and the NHP, which has been identified as the central repository for raptor data storage for the State of Utah.

Use of seasonal employees and volunteers, as well as Challenge Cost Share projects, should be utilized to augment the inventory and monitoring of raptor nests within a Planning Area, with the data entered into the abovementioned databases at the close of each nesting season. Project proponents, such as energy development interests, would be encouraged to participate and help support an annual raptor nest monitoring effort within their areas of interest.

Active nest sites should be monitored during all authorized activities that may have an impact on the behavior or survival of the raptors at the nest site. A qualified biologist would conduct the monitoring and document the impacts of the activity on the species. A final report of the impacts of the project should be placed in the Environmental Assessment file, with a copy submitted to the NHP. The report would be made available for review and should identify what activities may affect raptor nesting success and should be used to recommend appropriate buffer zones for various raptor species.

As data are gathered, and impact analyses are more accurately documented, adaptive management principles should be implemented. Authorization of future activities should take new information into account, better protecting raptors while potentially allowing more development and fewer restrictions, if data indicates that current restrictions are beyond those necessary to protect nesting raptors, or conversely indicates that current guidance is inadequate for protection of nesting raptors.

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ATTACHMENT 1—SITE SPECIFIC ANALYSIS DATA SHEET

Observer(s) _____ Date _____

1. Conduct a site visit to the area of the proposed action and complete the raptor nest site data sheet according to BLM data standards.

2. Area of Interest Documentation (Bold items require completion, other information is optional).

State _____ **Office** _____ **Management Unit** _____

Project ID# _____

Location (Description)

Legal T _____, R _____, Sec. _____, 1/4, _____ 1/4, _____ or UTM Coordinates

Latitude _____ Longitude _____

Photos Taken Y() N()

Description of photos:

Raptor Species _____ **Confirmed** _____ **Unconfirmed** _____

Distance From Proposed Disturbance to: **Nest** _____

Perch _____

Roost _____

Line of Site Evaluation From: **Nest** _____

Perch _____

Roost _____

Extent of Disturbance: Permanent _____ Temporary _____

Distance from Nest/Roost _____ Acreage _____

Length of Time _____ Timing Variations _____ Disturbance Frequency _____

Other Disturbance Factors: Yes ___ No ___ (If yes, explain what and include distances from nest to disturbances)

Approximate Age of Nest: New ___ **Historical:** (Number of Years) _____

Evidence of Use (Describe):

Habitat Values Impacted:

Proportion of Habitat Impacted (Relate in terms of habitat available):

Estimated Noise Levels of Project (db): _____

Available Alternative(s) (e.g., location, season, technology):

Associated Activities:

Cumulative Effects of Proposal and Other Actions in Habitat Not Associated With the Proposal:

Potential for site Rehabilitation: High _____ Low _____

Notes/Comments:

Summary of Proposed Modifications:

Possible modifications to the spatial and seasonal buffers within the USFWS “Guidelines” include the following:

Rationale:

Summary of Proposed Mitigation Measures:

Possible mitigation measures related to the proposal include the following:

Rationale:

Summary of Alternatives Considered:
Possible alternatives to the proposal include the following:

Rationale:

Recommendation to Field Office Manager Based on Above Findings:

Field Office Wildlife Biologist

Date

ATTACHMENT 2—NESTING PERIODS AND RECOMMENDED BUFFERS FOR RAPTORS IN UTAH

Species	Spatial Buffer (miles)	Seasonal Buffer	Incubation, # Days	Brooding, # Days Post-Hatch	Fledging, # Days Post-Hatch	Post-fledge Dependency to Nest, # Days ¹
Bald eagle	1.0	1/1-8/31	34-36	21-28	70-80	14-20
Golden eagle	0.5	1/1-8/31	43-45	30-40	66-75	14-20
N. Goshawk	0.5	3/1-8/15	36-38	20-22	34-41	20-22
N. Harrier	0.5	4/1-8/15	32-38	21-28	42	7
Cooper's hawk	0.5	3/15-8/31	32-36	14	27-34	10
Ferruginous hawk	0.5	3/1-8/1	32-33	21	38-48	7-10
Red-tailed hawk	0.5	3/15-8/15	30-35	35	45-46	14-18
Sharp-shinned hawk	0.5	3/15-8/31	32-35	15	24-27	12-16
Swainson's hawk	0.5	3/1-8/31	33-36	20	36-40	14
Turkey vulture	0.5	5/1-8/15	38-41	14	63-88	10-12
California condor	1.0	NN yet	56-58	5-8 weeks	5-6 months	2 months
Peregrine falcon	1.0	2/1-8/31	33-35	14-21	35-49	21
Prairie falcon	0.25	4/1-8/31	29-33	28	35-42	7-14
Merlin	0.5	4/1-8/31	28-32	7	30-35	7-19
American kestrel	NN ²	4/1-8/15	26-32	8-10	27-30	12
Osprey	0.5	4/1-8/31	37-38	30-35	48-59	45-50
Boreal owl	0.25	2/1-7/31	25-32	20-24	28-36	12-14
Burrowing owl	0.25	3/1-8/31	27-30	20-22	40-45	21-28
Flammulated owl	0.25	4/1-9/30	21-22	12	22-25	7-14
Great horned owl	0.25	12/1-9/31	30-35	21-28	40-50	7-14
Long-eared owl	0.25	2/1-8/15	26-28	20-26	30-40	7-14
N. saw-whet owl	0.25	3/1-8/31	26-28	20-22	27-34	7-14
Short-eared owl	0.25	3/1-8/1	24-29	12-18	24-27	7-14
Mex. Spotted owl	0.5	3/1-8/31	28-32	14-21	34-36	10-12
N. Pygmy owl	0.25	4/1-8/1	27-31	10-14	28-30	7-14
W. Screech owl	0.25	3/1-8/15	21-30	10-14	30-32	7-14
Common Barn-owl	NN ²	2/1-9/15	30-34	20-22	56-62	7-14

¹ Length of post-fledge dependency period to parents is longer than reported in this table. Reported dependency periods reflect the amount of time the young are still dependent on the nest site; i.e. they return to the nest for feeding. ² Due to apparent high population densities and ability to adapt to human activity, a spatial buffer is not currently considered necessary for maintenance of American kestrel or Common barn-owl populations. Actions resulting in direct mortality of individual bird or take of known nest sites is unlawful.

ATTACHMENT 3—UTAH RAPTOR MANAGEMENT EXPERTS FROM VARIOUS AGENCIES

The following list of personnel from various agencies in Utah, are recognized experts in the field of raptor ecology or have extensive field experience in managing raptor resources with competing land uses. The list is provided to inform BLM field biologists and managers of this network of specialized expertise that may be able to assist, as time permits, with specific raptor management issues. Individuals in this Utah Raptor Network, also have well established contacts with an informal extended network of highly qualified raptor ecologists outside the State (i.e., United States Geological Service, State Wildlife Agencies, Universities, etc.) which could provide an additional regional perspective.

It should be pointed out that this list is not intended to replace or interfere with established lines of communication but rather supplement these lines of communication.

Utah BLM	David Mills	david_mills@blm.gov	435-896-1571
Utah BLM	Steve Madsen	steve_c_madsen@blm.gov	801-539-4058
Utah UDWR	Dr. Jim Parrish	jimparrish@utah.gov	801-538-4788
Utah UDWR (NERO)	Brian Maxfield	brianmaxfield@utah.gov	435-790-5355
USFWS	Laura Romin	laura_romin@usfws.gov	385-285-7924
USFWS	Stephanie Graham	stephanie_graham@usfws.gov	385-285-7914
USFS	Chris Colt	ccolt@fs.fed.us	801-896-1062
HawkWatch Intl.	Jeff Smith	jsmith@hawkwatch.org	801-484-6808

ATTACHMENT 4—REFERENCES CITED

Bureau of Land Management. 1997. *Standards for Rangeland Health and Guidelines for Grazing Management*. U.S. Department of Interior, Bureau of Land Management.

Code of Federal Regulations; 43 CFR 3101.1-2, Leasing Regulations.

Endangered Species Act (ESA); 16 U.S.C. 1513-1543.

Migratory Bird Treaty Act (MBTA); 16 U.S.C. 703-712.

Romin, Laura A. and James A. Muck. 2002. *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances*. U.S. Department of Interior, U.S. Fish and Wildlife Service, Utah Field Office, Salt Lake City, Utah.

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APPENDIX I

Best Management Practices



1 BEST MANAGEMENT PRACTICES

Best management practices (BMPs) are land and resource management techniques determined to be the most effective and practical means of maximizing beneficial results and minimizing conflicts and negative environmental impacts from management actions. BMPs can include structural and nonstructural controls, specific operations, and maintenance procedures. To reduce or eliminate negative environmental impacts, BMPs can be applied before, during, and after activities. BMPs are not one-size-fits-all solutions; they should be selected and adapted through interdisciplinary analysis to determine which management practices are necessary to meet the goals and objectives of the Monument Management Plans (MMPs). The best practices and mitigation measures for a particular site are evaluated by considering site-specific conditions, local resource conditions, and a suite of techniques that guide or may be applied to management actions to aid in achieving desired outcomes. BMPs are often developed in conjunction with land use plans, but they are not considered a land use plan decision unless the land use plan specifies that they are mandatory. They may be updated or modified without a plan amendment if they are not mandatory.

This appendix does not provide an exhaustive list of BMPs; additional BMPs may be identified during an interdisciplinary process when evaluating site-specific management actions. BMPs may also be updated as new technology emerges. Applicants may also suggest alternate practices that could accomplish the same intended result. The implementation and effectiveness of BMPs must be monitored to determine whether the practices are achieving the MMPs' goals and objectives. Adjustments could be made, as necessary, to ensure that goals and objectives are met and to conform to changes in Bureau of Land Management (BLM) and/or U.S. Forest Service (USFS) regulations, policy, direction, or new scientific information.

1.1 Air Resources

1. All site-specific proposals would be reviewed for compliance with existing laws and policies regarding air quality and would be designed not to degrade existing quality. Specific procedures would include the following:
 - a. Coordinate with the Utah Department of Environmental Quality if an emission permit is required.
 - b. Prescribed fires would comply with the State of Utah Interagency Memorandum of Understanding requirements to minimize air quality impacts from resulting particulates. This procedure requires obtaining an open burning permit from the State prior to conducting a management-ignited fire (Utah Division of Air Quality 2006).
2. Fugitive dust
 - a. Water or alternative dust suppressants (i.e., surfactants or other erosion-control materials) would be utilized to minimize fugitive dust during construction and applied on material (sand, gravel, soil, minerals, or other matter that may create fugitive dust) piles.
 - b. Vehicles are not to exceed a speed of 20 miles per hour on any unpaved road to discourage the generation of fugitive dust.
 - c. Enclose, cover, water, or otherwise treat loaded haul trucks to minimize loss of material to wind and spillage.
 - d. Cover, enclose, or stabilize excavated or inactive material piles after activity ceases.
 - e. Use chip-seal or asphalt surface for long-term access.

- f. Train workers to handle construction materials and debris to reduce fugitive emissions.
3. Surface disturbance
 - a. Minimize the period of time between initial disturbance of the soil and revegetation or other surface stabilization. Utilize interim reclamation procedures.
 - b. Minimize the area of disturbed land.
 - c. Prompt revegetation of disturbed lands.
 - d. Revegetate, mulch, or otherwise stabilize the surface of all disturbed areas adjoining roads.
 4. Engine exhaust
 - a. All vehicles and construction equipment would be properly maintained to minimize exhaust emissions.
 - b. Utilize carpooling to and from sites to minimize vehicle-related emissions.
 - c. Reduce unnecessary idling.
 - d. Reduce elemental carbon, particularly from diesel-fueled engines, by utilizing controls such as diesel particulate filters on diesel engines or by using lower emitting engines (e.g., Tier 2 or better).
 - e. Opportunities to reduce nitrogen oxides (NOX), particularly from internal combustion engines, should be pursued to control impacts related to deposition and visibility in nearby Class 1 areas. This may include the use of lower-emitting engines (e.g., Tier 2 or better for mobile and non-road diesel engines) and/or add-on controls (e.g., selective catalytic reduction) where appropriate.
 - f. Use of ultra-low sulfur diesel in engines when available.
 - g. Stationary internal combustion engine standard of 2 grams NOX/brake horsepower-hour (bhp-hr) for engines 300 horsepower and 1 gram NOX/bhp-hr for engines more than 300 horsepower.

1.2 Cultural Resources

1. Evaluation of all BLM activities and BLM authorized activities shall be made in compliance with BLM Manual 8100, *The Foundations for Managing Cultural Resources*, and subsequent 8100 series manuals; the *Handbook of Guidelines and Procedures for Inventory, Evaluation, and Mitigation of Cultural Resources*; and the current State Protocol Agreement between the Utah BLM and the Utah State Historic Preservation Office.
2. When possible, locate projects in areas that are previously disturbed. To comply with the National Historic Preservation Act, the BLM and USFS must identify significant cultural resources. Under the current regulations and guidelines, the BLM and USFS may decide that no inventory needs to be conducted because the proposed action is located in an environment where ground disturbance has modified the surface so extensively that the likelihood of finding intact cultural resources is negligible.
3. When a NEPA document specifically stipulates the need for an archaeological monitor during construction or a project is located in areas that require an archaeological monitor to be present, it is the applicant's responsibility to contract an archaeological consultant that holds a current Utah BLM or USFS permit (as applicable) and that is authorized to work in the BENM. Fieldwork authorizations are required prior to any construction monitoring.

4. Where proposed projects or development will adversely affect a cultural resource, testing, data recovery or full excavation to recover scientific information may be required as mitigation. The applicant or operator bears the full cost of mitigation and is encouraged to consider avoiding adverse effects through project relocation or redesign rather than mitigating adverse effects.
5. A cultural resource must be allocated by appropriate analysis prior to a) authorizing or implementing any heritage tourism project, b) when special recreation permits are issued that will use a cultural resource, or c) a BLM recreation project is proposed that involves the use or interpretation of a cultural resource.
6. The National Historic Preservation Act as amended, requires that if newly discovered historic or archaeological materials or other cultural resources are identified during project implementation, work in that area must stop and the Authorized Officer (BLM)/Line Officer (USFS) must be notified immediately. Within 5 working days the Authorized Officer (BLM)/Line Officer (USFS) will inform the proponent as to:
 - a. Whether the materials appear eligible for the National Register of Historic Places;
 - b. The mitigation measures that will likely have to undertake before the site could be used (assuming in situ preservation is not practicable), (36 CFR 800.13);
 - c. A time frame for the Authorized Officer (BLM)/Line Officer (USFS) to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Office, that the Authorized Officer's (BLM)/Line Officer's (USFS) findings were correct and mitigation was appropriate.
7. A standard education/discovery stipulation for cultural resource protection shall be attached to the land use authorization. The operator or its contractor is responsible for informing all persons who are associated with the project operations that Federal laws protect cultural resources and they will be subject to prosecution for disturbing or destroying any historic or archaeological sites, or collecting any cultural objects, prehistoric or historic from Federal lands.
8. Strict adherence to the confidentiality of information concerning the nature and location of archeological resources will be required of any company issued a land use authorization and all of their subcontractors (Archaeological Resource Protection Act, 16 US Code 470hh).
9. If any previously unidentified cultural resources or human remains are discovered all activity in the vicinity of the discovery will cease and will be immediately reported to the BLM Field Office. Work may not resume at that location until it is approved by the Authorized Officer (BLM)/Line Officer (USFS).
10. Use visual resource BMPs to avoid, minimize, or mitigate potential adverse effects to historic properties.

1.3 Construction

1. When necessary to promote soil permeability and infiltration rates, construction may not be conducted during wet conditions when soils are saturated.
2. Drainage from disturbed areas will be confined or directed so as to not cause erosion in undisturbed areas.
3. Construction of access roads on steep hillsides and near water courses will be avoided where alternate routes provide adequate access.
4. Activities on slopes over 21% will be avoided to the extent possible.

5. Access roads requiring construction with cut and fill will be designed to minimize surface disturbance; and will take into account the character of the landform, natural contours, cut material, depth of cut, where the fill material will be deposited, resource concerns, and visual contrast. Roads will follow the contour of the land where practical.
6. Fill material will not be cast over hilltops or into drainages. Cut slope ratios should normally be no steeper than 3:1 and fill slopes no steeper than 2:1.
7. Placement of facilities on hilltops and ridgelines will be avoided. Facility layout should take into account the character of the topography and landform.
8. Burning of trash will not be allowed on the site.
9. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste-disposal site. "Waste" means all discarded matter, including human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
10. Trash will be retained in portable trash containers and hauled to an authorized disposal site.
11. Cattle guards will be installed and maintained whenever access roads go through pasture gates or Fences as practicable. Maintenance includes cleaning out under cattle guard bases when needed.
12. Only the minimum amount of vegetation necessary for the construction of structures and facilities shall be removed. Topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.
13. Stockpile all brush, limbs, crushed stumps, and other woody material separately from topsoil. Use the stripped vegetation for reclamation.
14. During reclamation, apply certified weed free mulch or other suitable materials and crimp or tackify to remain in place to reclaim areas for seed retention.
15. In areas where grading is necessary, the disturbed area shall be recontoured and all earthwork obliterated by removing embankments, backfilling excavation, and grading to reestablish the approximate original contours of the land on the right-of-way.
16. After site restoration, right-of-way holders shall construct waterbars along graded areas of the right-of-way as required by the Authorized Officer (BLM)/Line Officer (USFS).

1.4 Fire Management

1. Maintain organic groundcover, where possible, to minimize the formation of pedestals, rills, and/or surface runoff.
2. Do not build fire-lines in or around wetlands unless they are needed to protect life, property, and/or wetland resources. Use natural features as preferred fire-breaks over constructed fire-lines. When possible, use hand crews to construct fire-lines within, or adjacent to, wetlands and/or riparian areas.
3. Retain organic groundcover in filter strips during prescribed fires. As a fire-break, build fire-lines outside of filter strips, unless they are tied into a stream and/or wetlands.
4. Build fire-lines with rolling grades and minimum downhill convergence, where practicable. Out-slope or back-blade, permanently drain, and revegetate fire-lines shortly after the burn. Use certified local native plants, where practicable, to revegetate burned areas.

5. Conduct prescribed fires in a manner that minimizes the residence time on the soil, while at the same time conducting them in a manner that meets the burn objectives (such as when soils are moist).
6. Use broadcast burning, where appropriate, rather than dozer piles, during prescribed fire operations to prevent excessive heat transfer to the soil.
7. Resource Coordinators on Incident Overhead Teams and Fire Rehabilitation Teams will consider weed-risk factors and weed-prevention measures when developing resource protection recommendations
8. Locate temporary labor, spike, logging, and/or fire camps in a manner that protects surface and subsurface water resources. Consideration should be given to the disposal of human waste, wastewater, garbage, and/or other solid wastes.

1.5 Livestock Grazing

1. Grazing management practices will be implemented that do the following:
 - a. Maintain sufficient residual vegetation and litter on both upland and riparian sites to protect the soil from wind and water erosion and support ecological functions
 - b. Promote attainment or maintenance of proper functioning condition riparian/wetlands areas, appropriate stream channel morphology, desired soil permeability and infiltration, and appropriate soil conditions and kinds and amounts of plants and animals to support the hydrologic cycle, nutrient cycle and energy flow
 - c. Meet the physiological requirements of desired plants and facilitate reproduction and maintenance of desired plants to the extent natural conditions allow
 - d. Maintain viable and diverse populations of plants and animals appropriate for the site
 - e. Provide or improve, within the limits of site potentials, habitat for Threatened or Endangered species
 - f. Avoid grazing management conflicts with other species that have the potential of becoming protected or special status species
 - g. Encourage innovation, experimentation, and the ultimate development of alternatives to improve rangeland management practices
 - h. Give priority to rangeland improvement projects and land treatments that offer the best opportunity for achieving the *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or *USFS Rangeland Ecosystem Analysis and Monitoring Handbook* (USFS 2005).
2. Any spring and seep developments will be designed and constructed to protect ecological process and functions and improve livestock, wild horse and wildlife distribution.
3. New rangeland projects for grazing will be constructed in a manner consistent with the *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or *USFS Rangeland Ecosystem Analysis and Monitoring Handbook* (USFS 2005). Considering economic circumstances and site limitations, existing rangeland projects and facilities that conflict with the achievement or maintenance of the Standards will be relocated and/or modified.
4. Livestock salt blocks and other nutritional supplements will be located away from riparian/wetland areas or other permanently located, or other natural water sources. It is recommended that the locations of these supplements be moved every year.
5. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands, non-intrusive, non-native plant species are appropriate for use where native species (a) are not available, (b) are not economically

feasible, (c) cannot achieve ecological objectives as well as non-native species, and/or (d) cannot compete with already established non-native species.

6. When rangeland manipulations are necessary, the BMPs, including biological processes, fire, and intensive grazing, will be utilized prior to the use of chemical or mechanical manipulations.
7. When establishing grazing practices and rangeland improvements, the quality of the outdoor recreation experience is to be considered. Aesthetic and scenic values, water, campsites and opportunities for solitude are among those considerations.
8. Feeding of hay and other harvested forage (which does not refer to miscellaneous salt, protein, and other supplements), for the purpose of substituting for inadequate natural forage will not be conducted on BLM lands other than in (a) emergency situations where no other resource exists and animal survival is in jeopardy, or (b) situations where the Authorized Officer (BLM)/Line Officer (USFS) determines such a practice will assist in meeting a standard or attaining a management objective.
9. To eliminate, minimize, or limit the spread of noxious weeds, (a) only hay cubes, hay pellets, or certified, weed-free hay will be fed on BLM lands, and (b) reasonable adjustments in grazing methods, methods of transport, and animal husbandry practices will be applied.
10. On rangelands where a standard is not being met, and conditions are moving toward meeting the standard, grazing may be allowed to continue. On lands where a standard is not being met, conditions are not improving toward meeting the standard or other management objectives, and livestock grazing is deemed responsible, administrative action with regard to livestock will be taken by the Authorized Officer (BLM)/Line Officer (USFS) pursuant to CFR 4180.2(c).
11. Where it can be determined that more than one kind of grazing animal is responsible for failure to achieve a standard and adjustments in management are required, those adjustments will be made to each kind of animal, based on interagency cooperation as needed, in proportion to their degree of responsibility.
12. Rangelands that have been burned, reseeded or otherwise treated to alter vegetative composition will be closed to livestock grazing as follows: (1) burned rangelands, whether by wildfire or prescribed burning will be left ungrazed for a minimum of one complete growing season following the burn; and (2) rangelands that have been reseeded or otherwise chemically or mechanically treated will be left ungrazed for a minimum of two complete seasons following treatment.
13. Monitor livestock use and resulting levels of utilization on forage to help determine the proper carrying capacity of allotments.
14. Mitigate specific archaeological sites that have the potential for adverse impacts from livestock, as necessary and practicable. Continue to perform site-specific clearances on range improvements.

1.6 Soil/Water/Riparian

1. In areas of identified biological soil crusts, the top 2 to 5 inches of topsoil, inclusive of the biological soil crusts, shall be carefully stripped and stockpiled separately from all other soil materials where practicable. Organic matter and debris may be retained in the piles to help sustain biological activity and increase the effectiveness of respreading the crust material. Storage piles should be shallow to preserve microorganisms and seeds. Respread the soil crust during interim and final reclamation. During reclamation, reestablish mounds on the surface prior to reapplying the biological soil crusts. Stabilize topsoil stockpiles by 1) spraying with water to establish crust, and 2) covering with biodegradable product.

2. Regular monitoring of revegetated and reclaimed areas will be conducted with regular maintenance or reseeded as needed until the BLM determines that the revegetation is successful.
3. Topsoil will be segregated and stored separately from subsurface materials to avoid mixing during construction, storage, and interim and final reclamation. Subsurface materials will never be placed on top of topsoil material at any point in the operation. Stockpiles will be located and protected so that wind and water erosion are minimized and reclamation potential is maximized. Ensure that the topsoil is spread evenly over the reclaimed area.
4. No new surface-disturbing activities are allowed within active floodplains or within 100 meters of riparian areas, springs, or water sources unless it can be shown that: a) there is no practical alternative, b) all long-term impacts can be fully mitigated, or c) the activity will benefit and enhance the riparian area or water resources.
5. Locate and construct all structures crossing intermittent and perennial streams and 100 year floodplains such that they do not decrease channel stability or increase water velocity.
6. Any activity that includes water production should be managed to ensure maintenance or enhancement of riparian habitat.
7. Avoid loss or degradation of large cottonwood gallery riparian habitats.
8. All areas of surface disturbance within riparian areas and/or adjacent uplands should be revegetated with native species.
9. To avoid contamination of water sources and inadvertent damage to non-target species, aerial application of pesticides within 100 feet of a riparian wetland area or water source unless the product is registered for such use by the Environmental Protection Agency.
10. On USFS-administered lands, follow guidelines in Forest Service Handbook 2509.22 – Soil and Water Conservation Practices.

1.7 Recreation Activities

1.7.1 Camping

1. Cans, rubbish, and other trash shall not be discarded, buried, or dumped on public lands or related waters. Wet garbage such as egg shells, orange peels, leftover solid food, bones, melon rinds, etc., must be carried out. Trash cleanup at campsites and day use areas will include all litter or discarded items including small items such as bottle caps and cigarette butts.
2. No camping is permitted within 300 feet of a known prehistoric or historic site. No camping is allowed within cultural sites or archaeological resources as defined in Archaeological Resources Protection Act of 1979.
3. No camping is permitted within 200 feet of a water source other than perennial streams unless within a developed campground or with prior authorization is received from the authorizing officer or within a developed campground.
4. Where human waste pack out is not required and toilet facilities are not present, disposal of human waste is not permitted within 200 feet of a water source, trail, or campsite. Human waste will be deposited in a cat hole (6 inches deep) and covered with soil. Groups of eight or more people are required to pack waste out. Washing or bathing with soap is not permitted in tributary streams, springs, or other natural water sources. Dishwater must be strained prior to dispersal. Dishwater and bathwater may not be dumped within 100 feet of streams, springs, or other natural water sources. Only biodegradable soap may be used.

5. No in-canyon fires (no charcoal fires or fires from wood harvested on site or brought into the canyons) for warming or cooking in all Cedar Mesa Canyons.
6. Dispersed vehicle camping will be allowed only in previously disturbed areas within 150 feet of designated routes (on each side of a centerline).

1.7.2 Climbing

1. No climbing or rappelling is allowed over petroglyphs.

1.7.3 Outfitting / Recreation Pack and Saddle Stock Use

1. Allow only certified weed-free hay/feed on BLM- and USFS-administered lands.
2. Inspect, brush, and clean animals (especially hooves and legs) before entering public land.
3. Inspect and clean tack and equipment.
4. Regularly inspect trailheads and other staging areas for backcountry travel.
5. Alternate locations where livestock is tied or contained to minimize impacts on vegetation.
6. Educate and encourage outfitters to look for and report new weed infestations.
7. Riding and pack animals may not be tied to live trees under 6 inches diameter breast height in size. Using hobbles, picketlines, and highlines is preferable to hard tying to individual trees.
8. Livestock shall not be tied or picketed for more than 1 hour within 300 feet of a natural water source other than perennial streams. All animals will be under control en route and in camp to protect wildlife, other livestock, and range forage.
9. Corrals located on public lands are not available for public or recreational permittee use. Prior authorization is required for the use of such corrals.

1.7.4 Permitted Activities

1. Permittees may not leave unattended personal property on public lands administered by the BLM for a period of more than 48 hours without written permission of the Authorized Officer (BLM)/Line Officer (USFS), with the exception that vehicles may be parked in designated parking areas for up to 14 consecutive days. Unattended personal property is subject to disposition under the Federal Property and Administrative Services Act of 1949, as amended.

1.7.5 Visiting Cultural and Historic Sites

1. No surface collection or digging for artifacts.
2. No standing, sitting, or leaning on walls or other architectural features.
3. Do not touch petroglyphs and pictographs. Taking rubbings of petroglyphs is not allowed.

1.8 Vegetation/Weeds

1. Avoid or minimize the loss of sagebrush/steppe and blackbrush habitat.
2. In sagebrush/steppe habitat reclamation, use only mixes containing seed that is native to the sagebrush steppe.
3. Operations conducted in sagebrush/steppe habitat will focus on maintaining large blocks of sagebrush habitat.

4. Reseed or plant disturbed areas with desirable vegetation when the native plant community cannot recover and occupy the site sufficiently.
5. Seeding performed as part of reclamation operations will take place in the fall from mid-October until mid-December when the ground surface is not frozen.
6. Prior to commencing operations, all equipment and vehicles will be cleaned to remove seeds and soil that may contain seeds to avoid the spread of noxious weeds and invasive species.
7. Develop a Weed Management Plan.
8. Treatment to prevent the introduction or spread of invasive/noxious plants would conform to the guidelines in the MMP and follow BLM protocol.
9. Control noxious and invasive plants that become established along roads or adjacent to facilities.
10. Clean and sanitize all equipment brought in from other regions.
11. Use portable washing stations to periodically wash down equipment entering and leaving well field areas, especially during muddy conditions. Seeds and propagules of noxious plants are commonly transported on equipment and mud clinging to equipment.
12. Maintain trailheads, campgrounds, visitor centers, picnic areas, roads leading to trailheads, and other areas of concentrated public use in a weed-free condition. Consider high-use recreation areas as high-priority sites for weed and invasive plant eradication.
13. Sign trailheads and access points to educate visitors on noxious and invasive weeds and the consequences of their activities.
14. Inspect and document travel corridors for weeds and treat as necessary.
15. Encourage backcountry horsemen and hunters to pelletized feed. Pelletized feed is unlikely to contain weed seed. Inspect and clean mechanized trail vehicles of weeds and weed seeds.
16. Wash boots and socks before hiking into a new area. Inspect and clean packs, equipment, and bike tires.
17. Avoid hiking through weed infestations whenever possible.
18. Keep dogs and other pets free of weed seeds.
19. Avoid picking unidentified "wildflowers" and discarding them along trails or roadways.
20. Frequently and systematically inspect and document riparian areas and wetlands for noxious weed establishment and spread. Eradicate new infestations immediately since effective tools for riparian-area weed management are limited.
21. Promote dense growth of desirable vegetation in riparian areas (where appropriate) to minimize the availability of germination sites for weed seeds or propagules transported from upstream or upslope areas.

1.9 Visual Resources/Noise/Night Skies

1. Use natural or artificial features, such as topography, vegetation, or an artificial berm to help screen facilities. Design roads and other linear facilities to follow the contour of the landform or mimic lines in the vegetation. Avoid a straight road that will draw the viewer's eye and attention straight toward the facility at the end of the road.
2. If electricity is used to power a facility, electric lines will be buried in and solar panels will be placed out of view of the casual observer.

3. Semi-gloss paints should be used rather than flat paints; the selected paint color should be one or two shades darker than the background.
4. During reclamation, replace soil, brush, rocks, shrub/tree debris, etc., over disturbed earth surfaces, which allows for natural regeneration rather than introducing an unnatural looking grass cover.
5. Place infrastructure within or near previously disturbed locations.
6. Post night time quiet hours at developed campgrounds.
7. Limit the use of artificial lighting during nighttime operations to only those lights that are determined necessary for the safety of operations and personnel.
8. Utilize shielding and aiming techniques and limit the height of light poles to reduce glare and avoid light shining above horizon(s).
9. Use lights only where needed, use light only when needed, and direct all lighting onsite.
10. Use motion sensors, timers, or manual switching for areas that require illumination, but are seldom occupied.
11. Reduce lamp brightness and select lights that are not broad spectrum or bluish in color.
12. Require a Lightscape Management Plan where an extensive amount of long-term lighting is proposed.

1.10 Wildlife and Fisheries

1. Identify important, sensitive, and unique habitats, fish, and wildlife in the area. Incorporate mitigation practices that minimize impacts to these habitats.
2. If migration corridors and unique habitats are identified, mitigation practices to minimize impacts would be implemented.
3. Place infrastructure within or near previously disturbed locations to avoid new impacts to fish and wildlife habitat.
4. Seasonal restrictions on public vehicular access will be evaluated where there are fish and wildlife conflicts or road damage/maintenance issues.
5. To the extent possible, avoid activities and facilities that create barriers to the seasonal big game crucial habitats including any identified transitional and stopover routes.
6. Advise project personnel regarding appropriate speed limits to minimize wildlife mortality due to vehicle collisions. Roads would be reclaimed as soon as possible after they are no longer required.
7. To limit impacts to mule deer and elk, avoid using aggressive non-native grasses and shrubs in mule deer and elk habitat restoration projects.
8. Promptly report observations of potential wildlife problems to the regional office of the Utah Division of Wildlife Resources and, as applicable, to the U.S. Fish and Wildlife Service .
9. Abandoned mine lands would be monitored and surveyed prior to reclamation. If bats are present, bat gates would be installed unless human safety is at risk.
10. Where practicable, follow *Pollinator-Friendly Best Management Practices for Federal Lands* (USFWS 2015).

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APPENDIX J

Stipulations Applicable to Surface-Disturbing Activities



1 STIPULATIONS APPLICABLE TO SURFACE-DISTURBING ACTIVITIES

This appendix identifies stipulations for all surface-disturbing activities for the Bears Ears National Monument (BENM) Management Plans (MMPs)/Environmental Impact Statement (EIS). Stipulations are generally applied land use authorizations and permits issued on BLM- and USFS-administered lands. As appropriate, this appendix also identifies exceptions, modifications, and waivers for these stipulations.

Surface-disturbing activities are actions that alter the vegetation, surface/near-surface soil resources, and/or surface geologic features, beyond natural site conditions and on a scale that affects other public land values. Surface-disturbing activities may include operation of heavy equipment to construct power lines, roads or campgrounds, and conducting intensive vegetation treatments (e.g., prescribed fire). Surface-disturbing activities would typically not include such activities as livestock grazing, cross-country hiking, driving on designated routes, and minimum impact filming.

Although some activities would not require use or occupation of the surface, stipulations may still be applied if the activity requires Bureau of Land Management (BLM) or U.S. Forest Service (USFS) authorization and it is determined that the activity may result in more than negligible resource impacts. One example would be activities that require the use of low-flying aircraft in crucial wildlife areas, so a timing limitation would be applied.

1.1 Description of Stipulations

Table 1-1 shows resources of concern and stipulations including exceptions, modifications, and waivers. Three types of stipulations could be applied to land use authorizations: 1) No Surface Occupancy (NSO), 2) Timing Limitations (TL), and 3) Controlled Surface Use (CSU). Although not a stipulation, areas that are closed to oil and gas leasing and other surface-disturbing activities are also identified in Table 1-1.

Areas identified as NSO are closed to surface-disturbing activities. The NSO areas would be avoidance areas for rights-of-way; no rights-of-ways would be granted in NSO areas unless there are no feasible alternatives. Areas identified as TL would be closed to surface-disturbing activities during identified time frames. This stipulation would not apply to operation and maintenance activities, including associated vehicle travel, unless otherwise specified. Areas identified as CSU would require that proposals for surface-disturbing activities be authorized according to the controls and constraints specified.

1.2 Exceptions, Modification, and Waivers

Stipulations could be excepted, modified, or waived by the Authorized Officer (BLM)/Line Officer (USFS). An exception exempts the holder of the land use authorization document from the stipulation on a one-time basis. A modification changes the language or provisions of a surface stipulation, either temporarily or permanently. A waiver permanently exempts the surface stipulation. The documented environmental analysis for site-specific proposals would need to address proposals to exempt, modify, or waive a surface stipulation. Exceptions, waivers, and modifications would be considered when the agency conducts site-specific analysis. The Authorized Officer (BLM)/Line Officer (USFS) may require surveys, mitigation, environmental analysis, or

consultation with other government agencies when making this determination. Table 1-1 specifies the circumstances under which the general exceptions, modifications, and waivers would apply. The general exceptions, modifications, and waivers that commonly apply to many stipulations are as follows:

Exception – The Authorized Officer (BLM)/Line Officer (USFS) may grant an exception to a stipulation if it is determined that the factors leading to its inclusion as stipulation have changed sufficiently such that the protection provided by the stipulation is no longer necessary to meet resource objectives established in the MMPs.

Modification – The Authorized Officer (BLM)/Line Officer (USFS) may modify a stipulation as a result of new information if: 1) the protection provided by the stipulation is no longer necessary to meet resource objectives established in the final MMPs, or 2) the protection provided by the stipulation is no longer sufficient to meet resource objectives established in the final Resource Management Plans. The modification may be subject to public review for at least a 30-day period.

Waiver – The Authorized Officer (BLM)/Line Officer (USFS) may waive a stipulation if it is determined that the factors leading to its inclusion as a stipulation no longer exist. The waiver may be subject to public review for at least a 30-day period.

When no exceptions, modifications and waivers can be granted under a specific resource or resource use (e.g., the general exceptions, modifications, and waivers do not apply for the resource), then the table will state “none.” Specific exceptions, modifications, and waivers have also been developed for some surface-disturbing activities and are provided in Table 1-1.

Table 1-1. Stipulations including Exceptions, Modifications, and Waivers by Alternative
(Stipulations apply to both units of the Monument, unless specifically noted.)

Resource	Stipulation*	Applicable Area/Resource	Alternative				Stipulation Description
			A	B	C	D	
Cultural Resources	CSU	Eligible Historic Properties	X	X	X	X	Cultural properties eligible for or listed on the National Register of Historic Places would be surrounded by an avoidance area, identified at the time of survey, sufficient to avoid impacts. Purpose: Protect and preserve cultural resources and/or sites of religious significance to American Indians. Exceptions: An exception could be granted if the Authorized Officer (BLM)/Line Officer (USFS) determines that avoidance of direct and indirect impacts to historic properties is not feasible (e.g., avoidance may cause unacceptable damage to other public land resources or affect valid existing rights). Modification: General modification applies Waiver: General waiver applies
Cultural Resources	CSU	Historic Properties	X	X	X	X	Surveys and monitoring (where appropriate) are required for all surface-disturbing activities. Where monitoring encounters cultural resources, all operations must cease until the Authorized Officer (BLM)/Line Officer (USFS) determines whether the site can be avoided, protected, or fully excavated. Purpose: Protect and preserve cultural resources and/or sites of religious significance to American Indians. Exception: General exception applies Modification: General modification applies Waiver: General waiver applies
Lands and Realty	NSO	Right-of-Way (ROW) Avoidance Areas - Objects and Values			X		ROWs within ROW avoidance area would not be authorized. Purpose: To minimize impacts to resource objects and values Exception: An exception may be granted if the applicant can demonstrate that there is no practicable route outside of the unit, and the proposed ROW would be consistent with the objects and values of the BENM. Additionally, ROWs may be issued for maintenance and improvement of existing roads and, where necessary, to access non-Federal in-holdings so long as impacts to Monument objects can be avoided or mitigated. Modification: None Waiver: None
Lands with Wilderness Characteristics	NSO	Lands with Wilderness Characteristics (LWCs)			X		Purpose: To protect the size, naturalness, and outstanding opportunities for solitude and/or primitive and unconfined recreation Exception: On routes within and adjacent to these LWCs, an exception would be made to include a 100-foot setback from designated route centerlines to allow for road maintenance and events, as needed. Modification: None Waiver: None
Paleontological Resources	CSU	Within Potential Fossil Yield Classification (PFYC) Class 5 Areas	X				Surveys and monitoring (where appropriate) are required for all surface-disturbing activities in PFYC Class 5 areas. Where monitoring encounters vertebrate and vertebrate trace fossils during activities, all operations must cease until the Authorized Officer (BLM)/Line Officer (USFS) determines whether the site can be avoided, protected, or fully excavated. Purpose: To protect paleontological resources Exception: General exception applies Modification: General modification applies Waiver: General waiver applies
Paleontological Resources	CSU	Within Potential Fossil Yield Classification (PFYC) Class 4 and 5 Areas				X	Conduct on-site surveys for paleontological resources prior to implementing any surface-disturbing activities in all PFYC Class 4 and 5 areas. Surface-disturbing activities would avoid or minimize impacts to paleontological resources to the degree practicable. Where avoidance is not practicable, appropriate mitigation to reduce impacts would be developed based on site-specific survey information. Purpose: To protect paleontological resources Exception: General exception applies Modification: General modification applies Waiver: General waiver applies
Paleontological Resources	CSU	Within Potential Fossil Yield Classification (PFYC) Class 3, 4, and 5 Areas			X		Conduct on-site surveys for paleontological resources prior to implementing any surface-disturbing activities for all PFYC Class 3, 4, and 5 areas. Surface-disturbing activities would avoid or minimize impacts to paleontological resources to the degree practicable. Where avoidance is not practicable, appropriate mitigation to reduce impacts would be developed based on site-specific survey information. Purpose: To protect paleontological resources Exception: General exception applies Modification: General modification applies Waiver: General waiver applies
Paleontological Resources	CSU	Within Potential Fossil Yield Classification (PFYC) Class 3, 4, and 5 Areas		X			Conduct on-site surveys for paleontological resources prior to implementing any surface-disturbing activities for all PFYC Class 3, 4, and 5 areas. Surface-disturbing activities would avoid significant paleontological resources or would mitigate those impacts below the level of significance. This mitigation would be developed based on site-specific survey information. Purpose: To protect paleontological resources Exception: General exception applies Modification: General modification applies Waiver: General waiver applies
Riparian and Wetland Resources	NSO	Riparian Areas along Perennial Streams, Springs, and Active Floodplains	X				No new surface-disturbing activities are allowed within active floodplains or within 100 meters (approximately 300 feet) of riparian areas along perennial springs and streams and active floodplains. Purpose: Protect and conserve riparian and floodplains and associated vegetation Exception: An exception could be authorized if: a) there are no practical alternatives, b) impacts could be fully mitigated, or c) the action is designed to enhance the riparian resource values.

Resource	Stipulation*	Applicable Area/Resource	Alternative				Stipulation Description
			A	B	C	D	
							Modification: None Waiver: None
Riparian and Wetland Resources	NSO	Riparian Areas along Perennial and Intermittent Streams and Springs				X	No new surface-disturbing activities would be allowed within active floodplains or within 100 meters (approximately 300 feet) of riparian areas along perennial and intermittent springs. Purpose: Protect and conserve riparian and floodplains and associated vegetation Exception: An exception could be authorized: a) to buffer for vegetation treatments, b) to buffer to allow development of recreational infrastructure, c) if impacts could be fully mitigated, or d) if the action is designed to enhance the riparian resource values. Modification: None Waiver: None
Soil and Water Resources	NSO	Riparian Areas along Perennial and Intermittent Streams and Springs				X	No new surface-disturbing activities would be allowed within active floodplains or within 100 meters (approximately 300 feet) of riparian areas along perennial and intermittent springs. Purpose: Protect and conserve riparian and floodplains and associated vegetation Exception: An exception could be authorized: a) to buffer for vegetation treatments, b) to buffer to allow development of recreational infrastructure, c) if impacts could be fully mitigated, or d) if the action is designed to enhance the riparian resource values. Modification: None Waiver: None
Soil and Water Resources	CSU	Steep Slopes 21% to 40%	X	X	X	X	New surface disturbance/construction on slopes between 21 and 40% would require an erosion control strategy and Reclamation and Site Plan with a design approved by the Authorized Officer (BLM)/Line Officer (USFS) prior to construction and maintenance. Purpose: Protect soils and avoid erosion on sloped embankments Exception: General exception applies Modification: General modification applies Waiver: General waiver applies
Soil and Water Resources	NSO	Steep Slopes 40%	X	X	X	X	New surface-disturbing activities are not allowed on slopes greater than 40%. Purpose: Protect soils, avoid erosion, and maintain public health and safety in sloped embankments Exception: If, after an analysis, the Authorized Officer (BLM)/Line Officer (USFS) determines that it would cause undue or unnecessary degradation and that other placement alternatives are not practicable, surface occupancy in the NSO may be authorized. An Erosion Control Plan would be required for review and approval by Authorized Officer (BLM)/Line Officer (USFS) prior to construction and maintenance. Modification: None Waiver: None
Water	CSU	Seeps and Springs		X	X	X	Require a hydrologic study for all proposed groundwater withdrawals and new wells within 0.5 mile of seeps and springs. Do not authorize land uses for water withdrawals that could negatively affect groundwater for seeps and springs (Alternative A). Requirements for a hydrologic study would be determined at the implementation level based on groundwater levels and geologic conditions (Alternative B). Require a hydrologic study for all proposed groundwater withdrawals and new wells. Do not authorize land uses for water withdrawals that could negatively affect groundwater for seeps and springs (Alternative C). Purpose: To protect seep and spring areas Exception: General exception applies Modification: General modification applies Waiver: General waiver applies
Water	NSO	Floodplains and Surface Water Resources				X	No new surface-disturbing activities would be allowed within active floodplains or within 100 meters (approximately 300 feet) of riparian areas along perennial and intermittent springs and streams. Purpose: To protect floodplains and surface water resources Exception: The Authorized Officer (BLM)/Line Officer (USFS) would grant an exception to buffer to allow development of recreational infrastructure for vegetation treatments when it can be shown that all long-term impacts can be fully mitigated, and when the activity would benefit the riparian area. Modification: .None Waiver: None
Water	NSO	Floodplains and Surface Water Resources		X			With the exception of vegetation treatments and recreational infrastructure, preclude surface-disturbing activities within the following: <ul style="list-style-type: none"> Public water reserves Active floodplains 100-year floodplain of the San Juan River 500 feet of intermittent and perennial streams, rivers, riparian areas, wetlands, and springs Exception: General exception applies Modification: None Waiver: None
Special Designations: Shay Canyon ACEC (Indian Creek Unit)	NSO	Cultural and Paleontological Resources	X	X	X	X	No surface-disturbing activities allowed. Purpose: Maintain the relevant and important cultural, historic, and paleontological resource values Exceptions: An exception could be granted if, after an analysis, the Authorized Officer (BLM)/Line Officer (USFS) determines that the project would not impair or could benefit the Monument's relevant and important values. Modification: None Waiver: None

Resource	Stipulation*	Applicable Area/Resource	Alternative				Stipulation Description
			A	B	C	D	
Special Designations: Lavender Mesa ACEC	NSO	Relict Vegetation and Visual Resources	X	X	X	X	Surface-disturbing activities are not allowed on the mesa top. Purpose: Protect relevant and important vegetation and visual values Exceptions: An exception could be granted for test plots and facilities necessary to study the plant communities, restoration, and reclamation activities if, after an analysis, the Authorized Officer (BLM)/Line Officer (USFS) determines that the project would not impair or could benefit the Monument's relevant and important values. Modification: None Waiver: None
Special Designations: San Juan River ACEC	NSO	Relict Vegetation and Visual Resources	X	X	X	X	No surface-disturbing activities are allowed. Purpose: Protect relevant and important scenic, cultural and wildlife values Exception: An exception could be granted if activities are short term or, after an analysis, the Authorized Officer (BLM)/Line Officer (USFS) determines that the project would benefit the Monument's relevant and important values. Small signs, kiosks, route designators, etc. used to manage activities or resources could also be allowed. Modification: None Waiver: None
Special Designations: Wilderness Study Areas	NSO	Bridger Jack Mesa Wilderness Study Area (WSA) and Mule Canyon WSA	X	X	X	X	No surface-disturbing activities Purpose: To protect wilderness values Exception: An exception could be granted if the activity meets the impairment standard and/or enhances wilderness values. Modification: None Waiver: None
Special Status Species and Management Indicator Species	TL	Northern Goshawk Habitat	X	X	X	X	Prohibit forest vegetation manipulation within active nest areas during the active nesting period (March 1 to September 30). Purpose: To minimize disturbance to nesting northern goshawk Exception: None Modification: None Waiver: None
Special Status Species: Kit Fox	NSO	Kit Fox Habitat	X	X	X	X	No surface disturbances would be allowed within 660 feet (200 meters) of an occupied natal kit fox den. Purpose: To avoid disturbance to active natal kit fox dens Exception: An exception could be granted if protocol surveys determine that kit fox dens are not present. Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the stipulation area if portions of the area do not contain habitat. Waiver: A waiver may be granted if it is determined that the habitat no longer exists.
Special status species: Mexican spotted owl (MSO)	CSU/TL	MSO Designated Critical Habitat and Suitable Habitat	X	X	X	X	To protect MSO habitat and avoid negative impacts to the species, actions would be avoided or restricted that may cause stress and disturbance during nesting and rearing of their young. Appropriate measures would depend on whether the action is temporary or permanent and whether it occurs within or outside the owl nesting season: a) a temporary action is completed prior to the following breeding season, leaving no permanent structures and resulting in no permanent habitat loss; b) a permanent action continues for more than one breeding season and/or causes a loss of owl habitat or displaces owls through disturbances (i.e., creation of a permanent structure). Current avoidance and minimization measures include the following: <ul style="list-style-type: none"> Surveys would be required prior to implementation of the proposed action. All surveys must be conducted by qualified individual(s) acceptable to the agencies. Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the conservation measures below if project activities occur within 0.5 mile of suitable owl habitat. Determine potential effects of actions to owls and their habitat. Document the type of activity, acreage and location of direct habitat impacts and type and extent of indirect impacts relative to location of suitable owl habitat. Document whether action is temporary or permanent. Activities may require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures would be evaluated and, if necessary, Section 7 consultation reinitiated. Any activity that includes water production should be managed to ensure that enhancement of riparian habitat is maintained. For all temporary actions that may impact owls or their suitable habitat: <ol style="list-style-type: none"> If the action occurs entirely outside of the owl breeding season from March 1 through August 31 and leaves no permanent structure or permanent habitat disturbance, the action can proceed without an occupancy survey. If the action would occur during a breeding season, a survey for owls is required prior to commencing the activity. If owls are found, the activity should be delayed until outside of the breeding season. Rehabilitate access routes created by the project through such means as raking out scars, revegetation, gating access points, etc. For all permanent actions that may impact owls or suitable habitat: <ol style="list-style-type: none"> Survey two consecutive years for owls, according to accepted protocol, prior to commencing activities. If owls are found, no disturbing actions would occur within 0.5 mile of an identified site. If nest site is unknown, no activity would occur within the designated current and historic Protected Activity Center. Avoid permanent structures within 0.5 mile of suitable habitat unless it is surveyed and not occupied. Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be contingent upon a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims. Limit disturbances to and within suitable habitat by staying on designated and/or approved routes. Limit new access routes created by the project. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service (USFWS) to ensure continued compliance with the Endangered Species Act (ESA). Purpose: To minimize effects to the MSO Exception: An exception may be granted by the Authorized Officer (BLM)/Line Officer (USFS) if authorization is obtained from USFWS (through applicable provisions of the ESA). The Authorized Officer (BLM)/Line Officer (USFS) may also grant an exception if an analysis indicates that the nature or the conduct of the actions would not impair the primary constituent element determined necessary for the survival and recovery of the MSO, and the USFWS, through consultation, concurs with this determination.

Resource	Stipulation*	Applicable Area/Resource	Alternative				Stipulation Description
			A	B	C	D	
							<p>Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the boundaries of the stipulation area if an analysis indicates and the USFWS (through applicable provisions of the ESA) determines a portion of the area is not being used as Critical Habitat.</p> <p>Waiver: A waiver may be granted if the MSO is delisted and the Critical Habitat is determined by the USFWS as not necessary for the survival and recovery of the MSO.</p>
Special status species: Southwestern willow flycatcher (SWFL)	CSU/TL	SWFL Habitat (riparian areas)	X	X	X	X	<p>To protect SWFL habitat and avoid negative impacts to the species, actions would be avoided or restricted that may cause stress and disturbance during nesting and rearing of their young. Appropriate measures would depend on whether the action is temporary or permanent, and whether it occurs within or outside the nesting season: a) a temporary action is completed prior to the following breeding season, leaving no permanent structures and resulting in no permanent habitat loss; b) a permanent action continues for more than one breeding season and/or causes a loss of habitat or displaces flycatchers through disturbances, i.e., creation of a permanent structure. Current avoidance and minimization measures include the following:</p> <ol style="list-style-type: none"> 1. Surveys would be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s) and be conducted according to protocol. 2. Activities would require monitoring throughout the duration of the project. To ensure that desired results are being achieved, minimization measures would be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Water production would be managed to ensure maintenance or enhancement of riparian habitat. 4. Activities would maintain a 330 foot buffer from suitable riparian habitat year long. 5. Activities within 0.25 mile of occupied breeding habitat would not occur during the breeding season of April 15 to August 15. 6. Noise emissions within 0.25 mile of suitable habitat for the SWFL will not exceed baseline conditions during the breeding season of April 15 to August 15. 7. Ensure that water extraction or disposal practices do not result in change of hydrologic regime that would result in loss or degradation of riparian habitat. 8. Revegetate with native species all areas of surface disturbance within riparian areas and/or adjacent land. 9. Avoid loss or disturbance of riparian habitats. <p>Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.</p> <p>Purpose: To minimize effects to the SWFL</p> <p>Exception: An exception may be granted by the Authorized Officer (BLM)/Line Officer (USFS) if authorization is obtained from USFWS (through applicable provisions of the ESA). The Authorized Officer (BLM)/Line Officer (USFS) may also grant an exception if an environmental analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, would not impair the primary constituent element determined necessary for the survival and recovery of the SWFL and USFWS concurs with this determination.</p> <p>Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the boundaries of the stipulation area if an environmental analysis indicates and USFWS (through applicable provisions of the ESA) determines that a portion of the area is not being used as SWFL habitat.</p> <p>Waiver: May be granted if the SWFL is delisted and the Critical Habitat is determined by the USFWS as not necessary for the survival and recovery of the SWFL</p>
Special status species: Western yellow-billed cuckoo (YBCU)	CSU/TL	YBCU Habitat (riparian areas)	X	X	X	X	<p>Avoidance or use restrictions may be placed on any proposed project. Application of appropriate measures will depend whether the action is temporary or permanent and whether it occurs within or outside the breeding and nesting season: a) a temporary action is completed prior to the following breeding season, leaving no permanent structures and resulting in no permanent habitat loss; b) a permanent action could continue for more than one breeding season and/or cause a loss of habitat or displace western YBCU through disturbances. The following avoidance and minimization measures have been designed to ensure activities carried out are in compliance with the ESA. Integration of and adherence to these measures will facilitate review and analysis of any submitted project proposal. Following these measures could reduce the scope of ESA, Section 7 consultation at the permit stage. Avoidance and minimization measures include the following:</p> <ol style="list-style-type: none"> 1. Habitat suitability within the parcel and/or within a 0.5 mile buffer of the parcel will be identified prior to project authorization to identify potential survey needs. Habitat suitability should be determined in accordance with Guidelines for the Identification of Suitable Habitat for WYBCU in Utah (Appendix C). 2. Protocol Breeding Season Surveys will be required in suitable habitats prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by permitted individual(s) and be conducted according to protocol. 3. For all temporary actions that may impact YBCU or suitable habitat: <ol style="list-style-type: none"> a. If the action occurs entirely outside of the cuckoo breeding season (June 1 to August 31) and leaves no structure or habitat disturbance, the action can proceed without a presence/absence survey. b. If the action is proposed between June 1 to August 31, a presence/absence surveys for YBCU will be conducted prior to commencing activity. If YBCU are detected, activity should be delayed until September 1. c. Eliminate access roads created by the project through such means as raking out scars, revegetation, gating access points, etc. 4. For all permanent actions that may impact cuckoo or suitable habitat: <ol style="list-style-type: none"> a. Protocol level surveys by permitted individuals will be conducted prior to commencing activities. b. If cuckoos are detected, no activity will occur within 0.25 mile of occupied habitat. c. Ensure that noise levels at 0.25 mile from suitable habitat do not exceed baseline conditions. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure that noise does not encroach upon the 0.25 mile buffer for suitable habitat. 5. Temporary or permanent actions will require monitoring throughout the duration of the project to ensure that western YBCU or its habitat is not affected in a manner or to an extent not previously considered. Avoidance and minimization measures will be evaluated throughout the duration of the project. 6. Ensure that water extraction or disposal practices do not result in a change of hydrologic regime that would result in loss or degradation of riparian habitat 7. Revegetate with native species all areas of surface disturbance within riparian areas and/or adjacent uplands. <p>Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.</p> <p>Purpose: To minimize effects to the YBCU</p> <p>Exception: An exception may be granted by the Authorized Officer (BLM)/Line Officer (USFS) if authorization is obtained from USFWS (through applicable provisions of the ESA). The Authorized Officer (BLM)/Line Officer (USFS) may also grant an exception if an environmental analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, would not impair the primary constituent element determined necessary for the survival and recovery of the YBCU and the USFWS concurs with this determination.</p> <p>Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the boundaries of the stipulation area if an environmental analysis indicates and the USFWS (through applicable provisions of the ESA) determines that a portion of the area is not being used as YBCU habitat.</p> <p>Waiver: May be granted if the YBCU is de-listed and if USFWS determines it is not necessary for the survival and recovery of the western YBCU.</p>
Special status species: California condor	CSU/TL	California Condor Potential Habitat	X	X	X	X	<p>Avoidance or use restrictions may be placed on portions of areas known or suspected to be used by California condors. Application of appropriate measures would depend on whether the action is temporary or permanent, and whether it occurs within or outside potential habitat: a) a temporary action is completed prior to the following important season of use, leaving for habitat functionality; b) a permanent action continues for more than one season of habitat use and/or causes a loss of condor habitat function or displaces condors through continued disturbance (i.e., creation of a permanent structure requiring repetitious maintenance or emits disruptive levels of noise).</p> <p>Current avoidance and minimization measures include the following:</p> <ol style="list-style-type: none"> 1. The Peregrine Fund will be contacted early and throughout project design and implementation to determine and monitor the locations and status of California condors in or near the project area.

Resource	Stipulation*	Applicable Area/Resource	Alternative				Stipulation Description
			A	B	C	D	
							<p>2. Surveys would be required prior to operations in suitable habitat, unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s) approved by the agencies and must be conducted according to approved protocols.</p> <p>3. All workers will be informed about potential condor presence.</p> <p>4. If condors are present within the project area, the Peregrine Fund will be contacted. If there is any potential that the project will affect condors, the USFWS will be contacted immediately.</p> <p>5. The project area will be kept clean (e.g., trash disposed of, tools and materials picked up) to minimize the possibility of condors accessing inappropriate materials.</p> <p>6. To prevent water contamination and potential condor poisoning, a hazardous material (including vehicle fluids) leakage and spill plan will be developed and implemented. The plan will include provisions for immediate clean-up of any hazardous substance and will outline how each hazardous substance will be treated in case of leakage or spill. The plan will be reviewed by the district biologist to ensure that condors are adequately addressed.</p> <p>7. If surveys result in positive identification of condor use, all surface-disturbing activities would require monitoring throughout the duration of the project to ensure desired results of applied mitigation and protection. Minimization measures would be evaluated during development and, if necessary, Section 7 consultation may be reinitiated.</p> <p>8. Temporary activities within 1.0 mile of nest sites would not occur during the breeding season.</p> <p>9. Temporary activities within 0.5 mile of established roosting sites or areas would not occur during the season of use, which is from August 1 to November 30, unless the area has been surveyed according to protocols consulted on with the USFWS and determined to be unoccupied.</p> <p>10. No permanent infrastructure would be placed within 1.0 mile of nesting sites.</p> <p>11. No permanent infrastructure would be placed within 0.5 mile of established roosting sites or areas.</p> <p>12. Remove big game carrion to 100 feet from roadways occurring within foraging range.</p> <p>13. Re-initiation of Section 7 consultation with the USFWS would be sought immediately if mortality or disturbance to California condors is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures would be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.</p> <p>Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.</p> <p>Purpose: To minimize effects on the California condor</p> <p>Exception: An exception may be granted by the Authorized Officer (BLM)/Line Officer (USFS) if authorization is obtained from the USFWS (through applicable provisions of the ESA). The Authorized Officer (BLM)/Line Officer (USFS) may also grant an exception if an analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, would not impair the primary constituent element determined necessary for the survival and recovery of the California Condor and the USFWS concurs with this determination.</p> <p>Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the boundaries of the stipulation area if an analysis indicates and USFWS (through applicable provisions of the ESA) determines that a portion of the area is not being used as California Condor nesting or roosting territory.</p> <p>Waiver: May be granted (through applicable provisions of the ESA) if there is no reasonable likelihood of site occupancy over a minimum 10 year period</p>
Special Status Species – Fish	Moderate (CSU)	Special Status Fish Species Habitat	X	X	X	X	<p>Avoid surface-disturbing and disruptive activities within 330 feet of current special status fish species habitat.</p> <p>Purpose: To protect special status fish habitat</p> <p>Exception: An exception could be authorized only after a site-specific analysis and consultation with the USFWS.</p> <p>Modification: General modification applies</p> <p>Waiver: General waiver applies</p>
Special Status Species: Endangered Colorado River Fishes	NSO	San Juan River and All Associated Backwaters	X	X	X	X	<p>Surface-disturbing activities within the 100-year floodplain of the Colorado River and San Juan River would not be allowed. Other avoidance and minimization measures include the following:</p> <ol style="list-style-type: none"> 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individuals. 2. Surface-disturbing activities will require monitoring throughout the duration of the project. To ensure that desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Water production will be managed to ensure maintenance or enhancement of riparian habitat. 4. Avoid loss or disturbance of riparian habitats. 5. Conduct watershed analysis for surface-disturbing activities in designated critical habitat and overlapping major tributaries to determine toxicity risk from permanent facilities. <p>Purpose: To protect critical habitat of the endangered Colorado River fishes</p> <p>Exception: An exception may be granted by the Field Manager if:</p> <p>There is no practical alternative, and the development would enhance riparian/aquatic values. This exception would require consultation with the USFWS. The Field Manager may also grant an exception if an environmental analysis indicates that the nature or the conduct of the actions, as proposed or conditioned, would not impair the primary constituent element determined necessary for the survival and recovery of the endangered Colorado River fishes.</p> <p>Modification: The Field Manager may modify the boundaries of the stipulation area if an environmental analysis indicates and the USFWS (through applicable provisions of the ESA) determines that a portion of the area is not being used as Critical Habitat.</p> <p>Waiver: A waiver may be granted if the endangered Colorado River Fishes are delisted and the Critical Habitat is determined by the USFWS as not necessary for the survival and recovery of the endangered Colorado River fishes.</p>
Special Status Species: Colorado Cutthroat Trout	CSU	Within Special Status Fish Species Habitat	X	X	X	X	<p>Avoid surface-disturbing and disruptive activities within 330 feet of current special status fish species habitat.</p> <p>Purpose: To protect special status fish habitat</p> <p>Exception: An exception could be authorized only after a site-specific analysis and consultation with the USFWS.</p> <p>Modification: General modification applies</p> <p>Waiver: General waiver applies</p>
Special Status Species: Navajo Sedge	CSU	Potential, Suitable, and Occupied Habitats	X	X	X	X	<p>To minimize effects to the Federally threatened Navajo sedge, the agencies, in coordination with the USFWS, have developed the following avoidance and minimization measures. Implementation of these measures will help ensure the activities carried out comply with the ESA.</p> <p>For the purposes of this document, the following terms are so defined: <i>Potential habitat</i> is defined as areas that satisfy the broad criteria of the species habitat description, usually determined by preliminary, in-house assessment. <i>Suitable habitat</i> is defined as areas that contain or exhibit the specific components or constituents necessary for plant persistence, determined by field inspection and/or surveys. Habitat descriptions can be found in the Federal Register Notice and species recovery plan links at: http://www.fws.gov/endangered/species/. <i>Occupied habitat</i> is defined as areas currently or historically known to support Navajo sedge and is synonymous with “known habitat.”</p> <p>The following avoidance and minimization measures should be included in the plan of development:</p> <ol style="list-style-type: none"> 1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat prior to any ground disturbing activities to determine if suitable Navajo sedge habitat is present.

Resource	Stipulation*	Applicable Area/Resource	Alternative				Stipulation Description
			A	B	C	D	
							<p>2. Species surveys will be conducted within suitable habitat to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"). In such cases, a) 300 foot buffers will be maintained between surface disturbance and avoidance areas, or b) 1.25 mile buffers will be maintained between avoidance areas and subsurface disturbance activities, water depletions, or other actions that may result in changes to the local hydrology and avoidance areas. However, site-specific distances will need to be approved by USFWS and the agencies when surface disturbance will occur upslope of habitat. Where conditions allow, surveys:</p> <ul style="list-style-type: none"> a. Must be conducted by a qualified botanist(s), and according to the agencies and USFWS accepted survey protocols (USFWS 2011); outside contractors must be considered a Carex spp. expert and approved by the agencies and USFWS b. Will be conducted in suitable habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be positively identified (usually June 1st to September 30th; however, surveyors should verify that the plant is flowering by contacting an agency or USFWS Carex spp. expert or demonstrating that the nearest known population is in flower) c. Will occur within 300 feet from the edge of the proposed right-of-way and/or project disturbance for surface pipelines, roads, well pads, and other facilities requiring removal of vegetation d. Will occur within 1.25 miles of proposed water depletions or other actions that will result in changes to the local hydrology e. Will include but not be limited to plant species lists and habitat characteristics f. Will be valid until June 1 of the following year g. Electronic copies of clearance survey reports (included appendices) and geographic information system shape files will be sent no later than December 31st to each of the following: <ul style="list-style-type: none"> ▪ Utah Natural Heritage Program (with copies of Natural Heritage Program field survey forms); ▪ Applicable/affected land owners and/or management agencies; and ▪ USFWS Utah Field Office (mailing address: 2369 West Orton Circle, Suite 50, West Valley City, Utah 84119). <p>3. Design project infrastructure to minimize impacts within suitable habitat where surveys are technically infeasible.</p> <ul style="list-style-type: none"> a. For surface-disturbing activities: Infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300 foot buffers; however, site-specific buffer distances will need to be approved by the USFWS and the agencies when disturbance will occur upslope of habitat. b. For subsurface activities (including drilling), water depletions, or hydrologic alteration activities: Infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 1.25 mile surface and subsurface buffers; however, site-specific buffer distances will need to be approved by the USFWS and the agencies when disturbance will occur upslope of habitat. c. No surface (or subsurface) occupancy will be allowed in any down dip(s) of the strata as they could be associated with a Navajo sedge water source. Surface disturbance will not occur within a 300 foot buffer from the outer edge of the down dip(s). d. Ensure that water extraction or disposal practices do not result in change of hydrologic regime. e. Ensure that aboveground contaminants and byproducts are contained and properly managed. f. Ensure that any casings near or in aquifers are properly sealed and managed. g. Hydrofracturing will not be allowed within 1.25 miles of the edge of suitable geology unless hydrological and botanical surveys are completed that positively identify the aquifer as entirely unassociated with any Navajo sedge populations. h. Reduce well pad size and potash mining developments to the minimum needed without compromising safety. i. Roads and utilities should share common ROWs where possible. j. Reduce the width of ROWs and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within Navajo sedge habitat. k. Place signing to limit off-road travel in sensitive areas. l. Existing roads will be graveled within 300 feet of suitable habitat; the operator is encouraged to apply water for dust abatement to such areas and within 300 feet of suitable habitat from June 1 to September 30 (flowering and fruit set period); dust abatement applications will be comprised of water only. m. Place signing to reduce vehicle speed to 15 mph or lower on dirt or gravel roads within 300 feet of suitable habitat and 25 mph or lower in the project area. n. Stay on designated routes and other cleared/approved areas. o. Minimize the area disturbed by facility construction operations. Reclaim all areas of surface disturbance that are not required for facility operations. p. Postconstruction monitoring for invasive species will be required. <p>4. Where there is occupied habitat, project infrastructure will be designed to avoid direct disturbance and indirect impacts to populations and to individual plants:</p> <ul style="list-style-type: none"> a. For surface-disturbing activities: Infrastructure and activities will avoid all occupied habitat and incorporate 300 foot buffers; however, site-specific buffer distances will need to be approved by the USFWS and the agencies when disturbance will occur upslope of habitat. b. For subsurface activities (including drilling), water depletions, or hydrologic alteration activities: Infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 1.25 mile buffers; however, site-specific buffer distances will need to be approved by the USFWS and the agencies when disturbance will occur upslope of habitat. c. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged. d. No surface (or subsurface) occupancy will be allowed in the down dip(s) of the strata associated with the Navajo sedge water source. Surface disturbance will not occur within a 300 foot buffer from the outer edge of the down dip(s). e. Ensure that water extraction or disposal practices does not result in change of hydrologic regime. f. Ensure that above ground contaminants and byproducts are contained and properly managed. g. Ensure that any casings near or in aquifers are properly sealed and managed. h. Hydrofracturing will not be allowed within 1.25 miles from the edge of occupied habitat and associated water sources, unless studies are completed that positively identify the aquifer as entirely unassociated with the Navajo sedge population. i. Reduce well pad size and potash mining developments to the minimum needed without compromising safety. j. Limit new access routes created by the project. k. Roads and utilities should share common ROWs where possible. l. Reduce the width of ROWs and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat. m. Place signing to limit off-road travel in sensitive areas. n. Construction of roads will occur such that the edge of the ROW is at least 300 feet from: 1) any plant, 2) the outer boundary of occupied habitat, and 3) avoidance areas. o. Existing roads will be graveled within 300 feet of occupied habitat; the operator is encouraged to apply water for dust abatement to such areas and within 300 feet of occupied habitat from June 1 to September 30 (flowering and fruit set period); dust abatement applications will comprise water only. p. Place signing to reduce vehicle speed to 15 mph or lower on dirt or gravel roads within 300 feet of occupied habitat and 25 mph or lower in the project area. q. Stay on designated routes and other cleared/approved areas. r. The edge of the disturbance should be located at least 300 feet away from plants and avoidance areas, in general; however, site-specific distances will need to be approved by the USFWS and the agencies when disturbance will occur upslope of habitat. s. Surface pipelines will be laid such that a 300 foot buffer exists between the edge of the ROW and plants and 300 feet between the edge of ROW and avoidance areas; use stabilizing and anchoring techniques when the pipeline crosses suitable habitat to ensure that pipelines don't move toward the population. Site-specific distances will need to be approved by the USFWS and the agencies when disturbance will occur upslope of habitat. t. Construction activities will not occur within occupied habitat.

Resource	Stipulation*	Applicable Area/Resource	Alternative				Stipulation Description
			A	B	C	D	
							<p>u. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar).</p> <p>v. A qualified botanist will be on-site during construction to monitor the surface-disturbance activity and assist with implementation of applicable conservation measures (USFWS 2011).</p> <p>w. Place produced oil, water, condensate tanks, and any other by-products in centralized locations, away from occupied Navajo sedge habitat.</p> <p>x. Minimize the area disturbed by facility construction operations. Reclaim all areas of surface disturbance no longer required for facility operations.</p> <p>y. Postconstruction monitoring for invasive species will be required.</p> <p>5. For projects that cannot implement the measures or avoidance buffers identified above, site-specific conservation measures will be developed in coordination with the USFWS. Occupied Navajo sedge habitats within: 1) 300 feet of the edge of the surface pipeline ROWs; 2) 300 feet of the edge of the road ROWs; 3) 300 feet from the edge of the development areas; and 4) 1.25 miles of subsurface activities (including drilling), water depletions, or other hydrologic-alteration activities shall be monitored for a period of 3 years after ground-disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the agencies and the USFWS. To ensure that desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the agencies and the USFWS.</p> <p>6. Reinitiation of Section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for the Navajo sedge is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.</p> <p>Purpose: To minimize effects to the Federally listed, threatened Navajo sedge</p> <p>Exception: An exception may be granted by the Authorized Officer (BLM)/Line Officer (USFS) if authorization is obtained from the USFWS (through applicable provisions of the ESA). The Authorized Officer (BLM)/Line Officer (USFS) may also grant an exception if an environmental analysis indicated that the nature of the conduct of the actions, as proposed or conditioned, would not impair the survival and recovery of the Navajo sedge and the USFWS concurs with this determination.</p> <p>Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the boundaries of the stipulation area if an environmental analysis indicates and the USFWS (through applicable provisions of the ESA) determines that a portion of the area is no longer suitable habitat for Navajo sedge.</p> <p>Waiver: May be granted if the Navajo sedge is delisted and the USFWS determines it is not necessary for the survival and recovery of the Navajo sedge.</p>
Special Status Species - Plants	CSU	Special Status Species Plant Habitat	X	X	X	X	<p>Allow surface-disturbing activities within 330 feet or habitat fragmenting activities within 660 feet of potential, suitable, and occupied special status plant habitat only if 1) the activity is consistent and compatible with protection, maintenance, or enhancement of the habitat and populations as outlined in recovery and conservation plans and when such actions would not lead to the need to list the plant, or 2) the activity is relocated or redesigned to eliminate or reduce detrimental impacts to acceptable limits.</p> <p>Purpose: To protect Special Status Species plants</p> <p>Exception: An exception could be authorized if: 1) the activity is consistent and compatible with protection, maintenance, or enhancement of the habitat and populations as outlined in recovery and conservation plans and when such actions would not lead to the need to list the plant, or 2) the activity is relocated or redesigned to eliminate or reduce detrimental impacts to acceptable limits.</p> <p>Modification: None</p> <p>Waiver: None</p>
Special Status Species - Plants	CSU/TL	Within Federally Listed Plant Species Occupied and Suitable Habitats	X	X	X	X	<p>Suitable habitat for Federally listed plant species under the ESA. The following avoidance and minimization measures have been developed to facilitate review and analysis of any submitted applications for surface-disturbing activities:</p> <ol style="list-style-type: none"> Site inventories: <ol style="list-style-type: none"> Must be conducted to determine habitat suitability Are required in known or potential habitat for all areas proposed for surface disturbance before initiating project activities, at a time when the plant can be detected, and during appropriate flowering periods Should include documentation on individual plant locations and suitable habitat distributions Must be conducted by qualified individuals Surface-disturbing activities will require monitoring throughout the duration of the project. To ensure that desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. Project activities must be designed to avoid direct disturbance to populations and to individual plants: <ol style="list-style-type: none"> Designs will avoid concentrating water flows or sediments into plant occupied habitat. Construction will occur downslope of plants and populations where feasible; if well pads and roads must be sited upslope, buffers of 100 feet (minimum) between surface disturbances and plants and populations will be incorporated. Where populations occur within 200 feet of well pads, a buffer or fence will be established between the individuals or groups of individuals and the well pads during and postconstruction. Areas for avoidance will be visually identifiable in the field (e.g., flagging, temporary fencing, rebar). For surface pipelines, a 10 foot buffer will be used from any plant locations: If on a slope, stabilizing construction techniques will be used to ensure that the pipelines do not move toward the population(s). For riparian/wetland-associated species (e.g., Ute ladies'-tresses), avoid loss or disturbance of riparian habitats: <ol style="list-style-type: none"> Water extraction or disposal practices will not result in change of hydrologic regime. Disturbances to and within suitable habitat will be limited by staying on designated routes. New access routes created by the project will be limited. To limit OHV travel in sensitive areas, signing will be placed appropriately. Dust abatement practices will be implemented near occupied plant habitat. All disturbed areas will be revegetated with native species composed of species indigenous to the area. Postconstruction monitoring for invasive species will be required. Surface-disturbing activities will require monitoring throughout the duration of the project. To ensure that desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. <p>Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS prior to surface-disturbing activity to ensure continued compliance with the ESA.</p> <p>Purpose: To avoid and minimize disturbances within Federally listed plant species' occupied and suitable habitat</p> <p>Exception: None</p> <p>Modification: None</p> <p>Waiver: None</p>

Resource	Stipulation*	Applicable Area/Resource	Alternative				Stipulation Description
			A	B	C	D	
Visual Resources	CSU	Visual Resources			X	X	All areas not managed as Visual Resource Management (VRM) Class I (on BLM-administered lands) or Scenic Integrity Objective (SIO) Very High (on USFS-administered lands) under this alternative would be managed as VRM Class II (on BLM-administered lands) and SIO High (on USFS-administered lands). Exception: An exception to VRM Class II would be allowed for recreation infrastructure when this infrastructure is consistent with protection of Monument objects and values (Alternatives B and C). No exceptions would be authorized (Alternative D). Modification: None Waiver: None
Wildlife and Fisheries-Bald Eagle	CSU/TL	Nest Sites and Winter Roost Areas within Bald Eagle Habitat	X	X	X	X	To protect bald eagle habitat and avoid negative impacts on the species, actions would be avoided or restricted that may cause stress and disturbance during nesting and rearing of their young. Appropriate measures would depend on whether the action is temporary or permanent, and whether it occurs within or outside the bald eagle breeding or roosting season: a) a temporary action is completed prior to breeding or roosting season, leaving no permanent structures, and resulting in no permanent habitat loss; b) a permanent action continues for more than one breeding or roosting season and/or causes a loss of eagle habitat or displaces eagles through disturbances (i.e., creation of a permanent structure). Current avoidance and minimization measures include the following: <ol style="list-style-type: none"> 1. Surveys would be required prior to operations, unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s) and be conducted according to protocol. 2. Surface-disturbing activities would require monitoring throughout the duration of the project. 3. To ensure that desired results are being achieved, minimization measures would be evaluated. 4. Water production would be managed to ensure maintenance or enhancement of riparian habitat. 5. Temporary activities within 1.0 mile of nest sites would not occur during the breeding season, which lasts from January 1 to August 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 6. Temporary activities within 0.5 mile of winter roost areas, (e.g., cottonwood galleries) would not occur during the winter roost season of November 1 to March 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 7. No permanent infrastructure would be placed within 1.0 mile of nest sites. 8. No permanent infrastructure would be placed within 0.5 mile of winter roost areas. 9. Remove big game carrion to 100 feet from roadways occurring within bald eagle foraging range. 10. Avoid loss of or disturbance to large cottonwood gallery riparian habitats. 11. All areas of surface disturbance within riparian areas and/or adjacent uplands should be revegetated with native species. Purpose: To protect bald eagle habitat and avoid negative impacts to the species Exception: An exception may be granted by the Authorized Officer (BLM)/Line Officer (USFS) if authorization is obtained from the USFWS/Utah Division of Wildlife Resources (UDWR). The Authorized Officer (BLM)/Line Officer (USFS) may also grant an exception if an analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, would not impair the habitat and physical requirements determined necessary for the survival of the bald eagles. Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the boundaries of the stipulation area if an analysis indicates, and USFWS/UDWR determines, that a portion of the area is not being used as bald eagle nesting or roosting territories or if additional nesting or roosting territories are identified. Waiver: May be granted if there is no reasonable likelihood of site occupancy over a minimum 10 year period
Wildlife and Fisheries: Golden Eagle	CSU/TL	Golden Eagle Nest Sites and Territories	X	X	X	X	To protect the golden eagle habitat, nest sites, and nesting territories, actions would be avoided or restricted that may cause stress and disturbance during nesting and rearing of their young. Appropriate measures would depend on whether the action is temporary or permanent and whether it occurs within or outside the golden eagle breeding season: a) temporary action is completed prior to the following breeding or roosting season, leaving no permanent structures and resulting in no permanent habitat loss; b) a permanent action continues for more than one breeding or roosting season and/or causes a loss of eagle habitat or displaces eagles through disturbances (i.e., creation of a permanent structure). Current avoidance and minimization measures include the following: <ol style="list-style-type: none"> 1. Surveys would be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s), and be conducted according to protocol. 2. Surface-disturbing activities would require monitoring throughout the duration of the project. 3. To ensure desired results are being achieved, minimization measures would be evaluated. 4. Temporary activities within 0.5 mile of nest sites would not occur during the breeding season from January 1 to August 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 5. No permanent infrastructure would be placed within 0.5 mile of nest sites. 6. Remove big game carrion to 100 feet from roadways occurring within golden eagle foraging range. Purpose: To protect golden eagle habitat, nest sites, and nesting territories Exception: An exception may be granted by the Authorized Officer (BLM)/Line Officer (USFS) if authorization is obtained from USFWS and UDWR. The Authorized Officer (BLM)/Line Officer (USFS) may also grant an exception if an environmental analysis indicates that the nature or the conduct of the actions, as proposed or conditioned, would not impair the primary constituent element determined necessary for the survival and recovery of the golden eagle. Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the boundaries of the stipulation area if an environmental analysis indicates, and USFWS and UDWR determine, that a portion of the area is not being used as golden eagle nesting territory. Waiver: A waiver may be granted if an individual golden eagle nest has been inactive (unoccupied) for at least a period of 3 years. Nest-monitoring data for a 3 year period would be required before the waiver could be granted.
Wildlife and Fisheries Raptors	CSU/TL	Raptors	X	X	X	X	Appropriate seasonal and spatial buffers shall be placed on all known raptor nests in accordance with the <i>Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances</i> (USFWS 2002) and <i>Best Management Practices for Raptors and their Associated Habitats in Utah</i> Appendix H of this EIS). All construction-related activities will not occur within these buffers if preconstruction monitoring indicates the nests are active, unless a site-specific evaluation (survey) for active nests is completed prior to construction and if an agency wildlife biologist, in consultation with the USFWS and UDWR, recommends that activities may be permitted within the buffer. The agencies will coordinate with the USFWS and UDWR and have a recommendation within 3 to 5 days of notification. Any construction activities authorized within a protective (spatial and seasonal) buffer for raptors will require an on-site monitor. If there is any indication that activities are adversely affecting the raptor and/or its young, the on-site monitor will suspend activities and contact the Authorized Officer (BLM)/Line Officer (USFS) immediately. Construction may occur within the buffers of inactive nests. Construction activities may commence once monitoring of the active nest site determines that fledglings have left the nest and are no longer dependent on the nest site. Purpose: To minimize stress and disturbance to raptors during nesting season Exception: None Modification: None Waiver: None

Resource	Stipulation*	Applicable Area/Resource	Alternative				Stipulation Description
			A	B	C	D	
Wildlife and Fisheries: Migratory Birds	CSU/TL	Migratory Bird Habitat	X	X	X	X	Surveys for nesting migratory birds may be required during migratory bird breeding season (April 1 to July 31) whenever surface disturbances and/or occupancy is proposed in association with any surface-disturbing activity or occupancy within priority habitats. Surveys should focus on identified priority bird species in Utah. Field surveys will be conducted as determined by the Authorized Officer (BLM)/Line Officer (USFS). Based on the result of the field survey, the Authorized Officer (BLM)/Line Officer (USFS) will determine appropriate buffers and timing limitations.
Wildlife and Fisheries: Migratory Birds	TL	Migratory Bird Nesting Habitats	X	X	X	X	During nesting season for migratory birds (April 1–July 31), avoid or minimize surface- disturbing activities and vegetative-altering projects and broad-scale use of pesticides in identified occupied priority migratory bird habitat. Purpose: To minimize stress and disturbance to migratory birds during nesting season Exception: None Modification: None Waiver: None
Wildlife and Fisheries: Ferruginous Hawk and Burrowing Owl	TL	Ferruginous Hawk and Burrowing Owl Habitats	X	X	X	X	No surface disturbances would be conducted during the breeding and nesting season (March 1 to August 31 for burrowing owl and March 1 to August 1 for ferruginous hawk) within spatial buffers (0.25 mile for burrowing owl and 0.5 mile for ferruginous hawk) of known nesting sites. Purpose: To minimize stress and disturbance to ferruginous hawks and burrowing owls during breeding and nesting season Exception: No surface disturbances or occupancy will be conducted during the breeding and nesting season (March 1 to August 31 for burrowing owl and March 1 to August 1 for ferruginous hawk) within spatial buffers (0.25 mile for burrowing owl and 0.5 mile for ferruginous hawk) of known nesting sites. Exception: An exception would be granted if protocol surveys determine that nesting sites, breeding territories, and winter roosting areas are not occupied. Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the boundaries of the stipulation area if portions of the area do not include habitat or are outside the current defined area, as determined by the agencies. Waiver: May be granted if it is determined the habitat no longer exists or has been destroyed
Gunnison Prairie Dog	NSO	Gunnison Prairie Dog Habitat	X	X	X	X	No surface-disturbing activities within 660 feet (200 meters) of active prairie dog colonies identified within prairie dog habitat would be allowed. No permanent aboveground facilities are allowed within the 660 foot buffer. Purpose: To minimize stress and disturbance to active prairie dog colonies Exception: An exception may be granted by the Authorized Officer (BLM)/Line Officer (USFS) if the applicant submits a plan that indicates that impacts of the proposed action can be adequately mitigated or, if due to the size of the town, there is no reasonable location for the surface-disturbing activity and colonies cannot be avoided, the Authorized Officer (BLM)/Line Officer (USFS) will allow for loss of prairie dog colonies and/or habitat. Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the boundaries of the stipulation area if portions of the area do not include prairie dog habitat or active colonies are found outside the current defined area, as determined by the agencies. Waiver: May be granted if it is determined that the habitat no longer exists
Wildlife and Fisheries: Deer	TL	Deer Winter Range	X	X	X	X	No surface-disturbing activities from November 15 to April 15 Purpose: To minimize stress and disturbance to deer during crucial winter months Exception: The Authorized Officer (BLM)/Line Officer (USFS) may grant an exception if, after an analysis, the Authorized Officer (BLM)/Line Officer (USFS) determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance are allowed. Modification: The Authorized Officer (BLM)/Line Officer (USFS) may modify the boundaries of the stipulation area if a portion of the area is not being used as deer winter range. Waiver: May be granted if the deer winter range is determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the deer winter range
Wildlife and Fisheries: Elk	TL	Elk Winter Range	X	X	X	X	No surface-disturbing activities from November 15 to April 15 Purpose: To minimize stress and disturbance to elk during crucial winter months Exception: The Field Manager may grant an exception if, after an analysis, the Authorized Officer (BLM)/Line Officer (USFS) determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. Modification: The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as elk winter range. Waiver: May be granted if the elk winter range is determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the elk winter range.

* CSU = controlled surface use, NSO = no surface occupancy, TL = timing limitations

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APPENDIX K

**Comparison of Forest Products Removal between
U.S. Forest Service and Bureau of Land Management on
Lands Falling under the Boundary of the Bears Ears National Monument,
May 2018**



Proclamation 9558 (December 28, 2016): “Nothing in this proclamation shall be deemed to enlarge or diminish the rights or jurisdiction of any Indian tribe. The Secretaries shall, to the maximum extent permitted by law and in consultation with Indian tribes, ensure the protection of Indian sacred sites and traditional cultural properties in the monument and provide access by members of Indian tribes for traditional cultural and customary uses, consistent with the American Indian Religious Freedom Act (42 U.S.C. 1996) and Executive Order 13007 of May 24, 1996 (Indian Sacred Sites), including collection of medicines, berries and other vegetation, forest products, and firewood for personal noncommercial use in a manner consistent with the care and management of the objects identified above.”

Proclamation 9681 (December 4, 2017) states that “Proclamation 9558 is amended to clarify that, consistent with the care and management of the objects identified above, the Secretaries of the Interior and Agriculture may authorize ecological restoration and active management activities in the monument.”

Terms and conditions for product removal will be exclusive to the product plans for each individual agency’s landownership (i.e., There is no overarching forest products removal plan for the entire Bears Ears National Monument).

Both the U.S. Forest Service and the Bureau of Land Management have administrative maps that are issued with the forest products permit that highlight areas where no product removal is allowed. These are either permanent exclusion areas or sites that may change from year to year in response to current management issues (e.g., wood cutting excluded in areas of current active timber sales).

Distances for collection of other forest products vary and are typically denoted in the permit. Permit prices vary for each type of forest product removal.

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APPENDIX L
Air Quality Baseline



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Abbreviations

°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter
AQRVs	Air Quality Related Values
BLM	Bureau of Land Management
BTEX	benzene, toluene, ethyl benzene, isomers of xylene
CASTNET	Clean Air Status and Trends Network
CO	carbon monoxide
CO ₂	carbon dioxide
dv	deciview
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gas
GWP	global warming potential
IMPROVE	Interagency Monitoring of Protected Visual Environments
IPCC	International Panel on Climate Change
IUR	inhalation unit risks
Meq	milliequivalents
NAAQS	National Ambient Air Quality Standards
NADP	National Atmospheric Deposition Program
N ₂ O	nitrous oxide
NOAA	National Oceanic and Atmospheric Administration
NO _x	nitrogen oxides
PM _{2.5}	particulate matter less than 2.5 microns in diameter
PM ₁₀	particulate matter less than 10 microns in diameter
ppb	parts per billions
ppm	parts per million
REA	Rapid Ecoregional Assessment
REL	reference exposure levels
RfC	reference concentrations
SIP	State Implementation Plan
SO _x	sulfur oxides
UDAQ	Utah Division of Air Quality
DEQ	Utah Department of Environmental Quality
USFS	U.S. Forest Service
VOCs	volatile organic compounds
WOE	weight of evidence

1 AIR RESOURCES DEFINED

The Bureau of Land Management (BLM) and U.S. Forest Service (USFS) air resources programs include climate and air quality. Climate includes an assessment of the existing climate, a qualitative description of climate change, and an analysis of the potential effects of climate change on BLM and USFS resources. Air quality includes air quality management, interagency coordination, smoke abatement for prescribed fire, and air quality impact assessment. The BLM and USFS are responsible for considering and incorporating climate and air quality into multiple-use programs for managing the public lands in a manner that will protect air quality and complying with applicable laws, statutes, regulations, standards, and/or implementation plans.

2 AIR QUALITY

2.1 Air Quality Indicators

Air quality is measured by the concentration of air pollutants and visual appearance within a geographic area. Wind, temperature, humidity, geographic features, vegetation, and wildfire are biological factors that have the potential to affect the resource. Indicators of impacts on air quality include both an inability to meet National Ambient Air Quality Standards (NAAQS) and a degradation of Air Quality Related Values (AQRVs).

2.2 Clean Air Act Description

The Clean Air Act is the primary Federal legislation and provides the framework for protecting air quality at the national, State, and local level. The act designates the U.S. Environmental Protection Agency (EPA) as the chief governing body of air resources in the United States but provides States, and in some cases, Tribal governments, management authority to implement their own air quality legislation, monitoring, and control measures.

2.3 National Ambient Air Quality Standards

Under the authority of the Clean Air Act, the EPA has set time-averaged NAAQS for six criteria air pollutants considered to be key indicators of air quality: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone, sulfur dioxide (SO₂), lead, and two categories of particulate matter (PM) (PM less than 10 microns in diameter [PM₁₀] and PM less than 2.5 microns in diameter [PM_{2.5}]). NAAQS consist of primary and secondary standards, with the former providing requirements for public health—particularly sensitive populations such as asthmatics, children, and the elderly—and the latter incorporating public welfare provisions such as the protection of visibility, wildlife, crops, vegetation, and buildings. The Utah Department of Environmental Quality (DEQ), Division of Air Quality (UDAQ) is responsible for ensuring compliance with the NAAQS within the State of Utah.

2.3.1 *Attainment/Nonattainment Determination for the Planning Area*

The Clean Air Act requires each State to identify areas that have ambient air quality in violation of Federal standards using monitoring data collected through State monitoring networks. Areas that violate air quality standards are designated as nonattainment areas for the relevant criteria air pollutants. Areas that comply with air quality standards are designated as attainment areas for the

relevant criteria air pollutants. Areas that have been redesignated from nonattainment to attainment are considered maintenance areas. Areas of uncertain status are generally designated as unclassifiable but are treated as attainment areas for regulatory purposes. All of the Planning Area is in attainment or unclassifiable for each of the NAAQS (EPA 2018a).

2.3.2 Compliance with the National Ambient Air Quality Standards

Based on monitoring data and the attainment/unclassifiable determination for the Planning Area, the Shash Jáa and Indian Creek Units are in compliance with the NAAQS.

2.3.3 Compliance with State Standards

The State of Utah has not developed State ambient air quality standards; the NAAQS are the applicable standards for the Shash Jáa and Indian Creek Units.

Table 1 shows the current NAAQS.

Table 1. National Ambient Air Quality Standards

Pollutant	Primary/Secondary	Averaging Time	Level	Form	
Carbon monoxide (CO)	Primary	8-hour	9 ppm	Not to be exceeded more than once per year	
		1-hour	35 ppm		
Lead	Primary and secondary	Rolling 3-month average	0.15 µg/m ^{3a}	Not to be exceeded	
Nitrogen dioxide	Primary	1-hour	100 ppb	98th percentile, averaged over 3 years	
	Primary and secondary	1-year	53 ppb ^b	Annual mean	
Ozone	Primary and secondary	8-hour	0.070 ppm ^c	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years	
Particle pollution	PM _{2.5}	Primary	1-year	12 µg/m ³	Annual mean, averaged over 3 years
		Secondary	1-year	15 µg/m ³	Annual mean, averaged over 3 years
		Primary and secondary	24-hour	35 µg/m ³	98th percentile, averaged over 3 years
	PM ₁₀	Primary and secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur dioxide	Primary	1-hour	75 ppb ^d	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year	

Source: EPA 2018b.

Note: µg/m³ = micrograms per cubic meter; ppb = parts per billion; ppm = parts per million.

^a In areas designated nonattainment for the lead standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m³ as a calendar quarter average) also remain in effect.

^b The level of the annual NO₂ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of a clearer comparison to the 1-hour standard level.

^c Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) ozone standards additionally remain in effect in some areas. Revocation of the previous (2008) ozone standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

^d The previous SO₂ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: 1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and 2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO₂ standards or is not meeting the requirements of a State Implementation Plan (SIP) call under the previous SO₂ standards (40 Code of Federal Regulations 50.4(3)). A SIP call is an EPA action requiring a State to resubmit all or part of its SIP to demonstrate attainment of the required NAAQS.

2.4 Air Pollutants of Concern

2.4.1 Major Emission Sources

There are no major emission sources within the Shash Jáa and Indian Creek Units. Major emission sources (large industrial sources and sources with Clean Air Act Title V operating permits) in San Juan County, Utah, include the Moab Compressor Station and Lisbon natural gas Processing Plant, located northeast of the Indian Creek Unit, and the Daneros Mine and Four Corners Compressor Station, located east of the Shash Jáa Unit. There are an additional 19 approved and permitted sources such as tank batteries, pump stations, aggregate plants, and pits northeast and east of the Units (Utah DEQ 2018).

2.4.2 Criteria Air Pollutants Emitted

The EPA prepares a national emissions inventory every 3 years to provide a comprehensive and detailed estimate of emissions from all air emission sources in the country. Emissions in the inventory are presented by County. Table 2 summarizes the 2014 emissions in San Juan County.

Table 2. 2014 Emissions Inventory by Source (tons per year)

County	Source	CO	NO _x	PM ₁₀	PM _{2.5}	SO _x	VOCs
San Juan	Area source	384.42	649.79	4,252.57	524.24	2.72	218.46
	Oil and gas	296.09	199.29	2.39	2.38	0.93	11,840.05
	Non-road mobile	1,718.66	103.03	21.12	19.67	0.42	535.85
	On-road mobile	1,551.00	747.70	239.52	78.86	2.89	153.20
	Point source	240.37	357.52	234.93	88.63	505.93	60.30
	Biogenics	15,795.81	0.00	0.00	0.00	0.00	72,896.61
	Wildfires	1.35	0.04	0.16	0.15	0.00	0.23
	Total	19,987.71	2,057.37	4,750.69	713.93	512.89	85,704.71

Source: EPA 2018c.

Note: No_x = nitrogen oxides; So_x = sulfur oxides; VOCs = volatile organic compounds.

2.4.3 Summary Tables of Regional Air Quality Monitoring Data

The UDAQ and Federal agencies manage the network of air monitoring stations in Utah that meet EPA's air monitoring requirements. There are no State air monitoring stations (UDAQ 2017) and two Federal air monitoring stations (EPA 2018d) in or near the Planning Area. The USFS operates an air monitoring station in the Manti-La Sal National Forest, between the Indian Creek and Shash Jáa Units, that monitors ozone concentrations. The National Park Service (NPS) operates an Interagency Monitoring of Protected Visual Environments (IMPROVE) air monitoring station in Canyonlands National Park, approximately 20 miles northwest of the Indian Creek Unit. Data from these monitoring stations for the most recent 3 years of data and the 3-year average concentration compared with the NAAQS, are shown in Table 3. These data show that recent ozone concentrations remain below but are approaching the NAAQS for ozone.

Table 3. Air Quality Monitoring Values

Pollutant	Averaging Time	2014	2015	2016	3-Year Average	NAAQS	Percent of NAAQS
National Park Service: Canyonlands National Park, San Juan County, Utah							
Ozone	8-hour	0.064 ppm	0.065 ppm	0.064 ppm	0.0643 ppm	0.070 ppm	92
U.S. Forest Service: Dark Canyon, San Juan County, Utah							
Ozone	8-hour	0.065 ppm	0.065 ppm	0.057 ppm	0.0623 ppm	0.070 ppm	89

Source: EPA 2018e.

2.4.4 Hazardous Air Pollutants

The Clean Air Act regulates toxic air pollutants, or hazardous air pollutants (HAPs), that are known or suspected to cause cancer or other serious health effects or adverse environmental impacts. The hazardous air pollutant regulatory process identifies specific chemical substances that are potentially hazardous to human health and sets emission standards to regulate the amount of those substances that can be released by individual facilities or by specific types of equipment. Controls are usually required at the source to limit the release of these air toxics into the atmosphere.

Although HAPs do not have Federal air quality standards (exposure thresholds do exist), some States have established “significance thresholds” to evaluate human exposure for potential chronic inhalation illness and cancer risks. There are no applicable Federal or State of Utah ambient air quality standards for assessing potential hazardous air pollutant impacts to human health, and monitored background concentrations are rarely available. Therefore, reference concentrations (RfC) for chronic inhalation exposures and reference exposure levels (REL) for acute inhalation for non-cancer health effects, EPA weight of evidence (WOE) for carcinogenicity (under 1986 and 2005 EPA cancer guidelines), and inhalation unit risks (IUR) for cancer health effects are applied as significance criteria.

HAPs associated with the oil and gas industry include formaldehyde, benzene, toluene, ethyl benzene, isomers of xylene (BTEX) compounds, and normal-hexane (n-hexane). Table 4 provides the RfCs, RELs, WOE, and IURs for these pollutants.

Table 4. Hazardous Air Pollutant Significant Thresholds

HAP	REL (1-hour Average) ($\mu\text{g}/\text{m}^3$)	RfC ^a (Annual Average) ($\mu\text{g}/\text{m}^3$)	EPA WOE ^e	IUR ($1/\mu\text{g}/\text{m}^3$)
Benzene	1,300 ^{a, b}	30 ^b	CH	0.000078
	160,000 ^d	-		
Toluene	37,000 ^a	5,000	Inl	-
Ethyl benzene	350,000 ^c	1,000	D	0.000025
Xylenes	22,000 ^b	100	Inl	-
n-Hexane	390,000 ^c	700	Inl	-
Formaldehyde	94 ^a	9.8	B1	0.000088

^a EPA Chemical-Specific Reference Values (EPA 2012a, b, c).^b REL for benzene is for a 6-hour average.^c National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health, because no REL is available.^d EPA WOE: B1 = probable carcinogen; CH = carcinogenic to humans; D = not classifiable; Inl = inadequate information to assess carcinogenic potential.

2.4.5 Volatile Organic Compounds

Volatile organic compounds (VOCs) are regulated by the EPA to prevent the formation of ozone, a constituent of photochemical smog. Ground-level ozone is not emitted directly into the air but is created by chemical reactions between VOCs and NO_x in the presence of sunlight. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NO_x and VOCs. VOCs are also emitted from natural (or biogenic) sources, such as trees and plants.

2.4.6 Prevention of Significant Deterioration

The Prevention of Significant Deterioration (PSD) program of the Clean Air Act ensures that air quality in areas with clean air does not significantly deteriorate, while maintaining an allowable margin for future industrial growth. Under the PSD provisions of the Clean Air Act, incremental increases of specific pollutant concentrations are limited above a legally defined baseline level (Table 5). Many National Parks and Wilderness Areas are designated as Class I areas. The PSD program protects air quality within these areas by allowing only slight incremental increases in pollutant concentrations. Areas of Utah not designated as PSD Class I are classified as Class II. For Class II areas, greater incremental increases in ambient pollutant concentrations are allowed as a result of controlled growth. While the Clean Air Act allows for Class III designations, none have been designated.

Table 5. Prevention of Significant Deterioration Classifications

Class	Maximum Allowable Increase (µg/m ³)							
	PM				SO ₂			NO ₂
	PM ₁₀ Annual Arithmetic Mean	PM ₁₀ 24-Hour Maximum	PM _{2.5} Annual Arithmetic Mean	PM _{2.5} 24-Hour Maximum	Annual Arithmetic Mean	24-Hour Maximum	3-Hour Maximum	Annual Arithmetic Mean
Class I	4	8	1	2	2	5	25	2.5
Class II	17	30	4	9	20	91	512	25
Class III	34	60	8	18	40	182	700	50

2.5 Air Quality Related Values

Air quality related values (AQRVs) are defined as resources that may be impaired by changes in air quality. The most notable examples of AQRVs are visibility and atmospheric deposition that can affect the scenic, cultural, physical, biological, ecological, and/or recreational areas of a region.

2.5.1 Closest Class I Areas and Distances to Planning Area Boundary

As described under the PSD program, the Clean Air Act gives special air quality and visibility protection to National Parks larger than 6,000 acres and Wilderness Areas larger than 5,000 acres that were in existence when the act was amended in 1977, or additional areas such as National Monuments and wildlife refuges that have since been designated by Federal regulation. Class I areas within 62 miles (100 kilometers) of the Planning Area boundary are shown in Table 6.

Table 6. Class I Areas

Class I Area	Federal Land Manager	Approximate Distance to Planning Area Boundary
Canyonlands National Park, Utah	NPS	0 mile
Arches National Park, Utah	NPS	30 miles
Mesa Verde National Park, Colorado	NPS	60 miles

Source: 40 Code of Federal Regulations 81.43.

2.5.2 Nearest Sensitive Class II Areas and Distances to Planning Area Boundary

Class II areas are the remaining areas in the United States (outside of nonattainment and maintenance areas) that are not Class I. Federal land managers may identify Class II lands under their jurisdiction that are sensitive to the effects of air pollution. These areas are referred to as sensitive Class II areas and may include Wilderness Areas, National Wildlife Refuges, National Monuments, National Historical Parks, and National Recreation Areas that were not formally designated as Class I areas. Sensitive Class II areas have not been identified by Federal land managers for the Bears Ears Monument Plan and Environmental Impact Statement; however, potential sensitive Class II areas within 62 miles (100 kilometers) of the proposed Bears Ears National Monument are shown in Table 7.

Table 7. Sensitive Class II Areas

Class I Area	Federal Land Manager	Approximate Distance to Planning Area Boundary
Natural Bridges National Monument	NPS	4 miles
Dark Canyons Wilderness Area, Utah	USFS	10 miles
Glen Canyon National Recreation Area, Utah	NPS	20 miles
Hovenweep National Monument, Utah	NPS	25 miles
Canyons of the Ancients National Monument, Colorado	BLM	25 miles

Source: 40 Code of Federal Regulations 81.43.

2.5.3 Visibility

Visibility is the clarity with which distant objects are perceived and is affected by pollutant concentrations, plume impairment, regional haze, relative humidity, sunlight, and cloud characteristics.

Visibility can be expressed in terms of deciviews (dvs), a measure for describing perceived changes in visibility. One dv is defined as a change in visibility that is just perceptible to an average person, about a 10% change in light extinction. To estimate potential visibility impairment, monitored aerosol concentrations are used to reconstruct visibility conditions for each day monitored. These daily values are then ranked from clearest to haziest and divided into three categories to indicate: 1) the mean visibility for all days (average); 2) the 20% of days with the clearest visibility (20% clearest); and 3) the 20% of days with the worst visibility (20% haziest).

Visibility in Federal Class I areas is monitored through the Interagency Monitoring for the Protection of Visual Environments (IMPROVE) monitoring program. This program evaluates current visibility

conditions and identifies chemical species and emission sources responsible for visibility impairment in Federal Class I areas. The IMPROVE network has operated a monitor in Canyonlands National Park, northwest of the Indian Creek Unit, since 1988.

2.5.4 Mean Visual Range

Without the effects of human-made air pollution, a natural visual range would be nearly 140 miles in the western United States, while the current visual range is 35 to 90 miles (EPA 2018f).

2.5.5 Deposition

Atmospheric deposition refers to the processes by which air pollutants are removed from the atmosphere and deposited on terrestrial and aquatic ecosystems and is reported as the mass of material deposited on an area (kilogram per hectare) per year. Atmospheric deposition can cause acidification of lakes and streams. One expression of lake acidification is a change in acid neutralizing capacity, the lake's capacity to resist acidification from atmospheric deposition. Acid neutralizing capacity is expressed in units of micro-equivalents per liter.

Wet deposition refers to air pollutants deposited by precipitation, such as rain and snow. One expression of wet deposition is precipitation pH, a measure of the acidity or alkalinity of the precipitation. There are five National Atmospheric Deposition Program (NADP) stations in Utah: Logan, Murphy Ridge, Green River, Bryce Canyon National Park, and Canyonlands National Park. The NADP stations in Bryce Canyon National Park and Canyonlands National Park have assessed precipitation chemistry since 1985 and 1997, respectively.

Dry deposition refers to the transfer of airborne gaseous and particulate material from the atmosphere to the Earth's surface. The Clean Air Status and Trends Network (CASTNET) has measured dry deposition of ozone, sulfur dioxide, nitric acid, sulfate, nitrate, and ammonium, in the United States since the late 1980s. There is one CASTNET station in Utah at Canyonlands National Park.

2.6 Current Conditions

2.6.1 Criteria Pollutants Defined

Carbon monoxide. CO is a colorless, odorless gas that can be harmful when inhaled in large amounts. The greatest sources of CO to outdoor air are cars, trucks, and other vehicles or machinery that burn fossil fuels. Breathing air with a high concentration of CO reduces the amount of oxygen that can be transported in the bloodstream to critical organs like the heart and brain. Very high levels of CO are not likely to occur outdoors. However, when CO levels are elevated outdoors, they can be of concern for people with some types of heart disease (EPA 2018g).

Nitrogen dioxide. NO₂ is one of a group of highly reactive gases known as oxides of nitrogen or nitrogen oxides (NO_x). NO₂ is used as the indicator for the larger group of NO_x. NO₂ and other oxides of nitrogen react with chemicals in the air to form both PM and ozone. NO₂ occurs primarily in the air from the burning of fuel; it forms from emissions from cars, trucks and buses, power plants, and off-road equipment. Breathing air with a high concentration of NO₂ can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases—particularly asthma—leading to respiratory symptoms. Longer exposures to elevated concentrations may contribute to the development of asthma and potentially increase

susceptibility to respiratory infections. People with asthma, as well as children and the elderly, are generally at greater risk for the health effects of NO₂ (EPA 2018g).

Ozone. Ground-level ozone is not emitted directly into the air but is created by chemical reactions between nitrogen oxides and volatile organic compounds in the presence of sunlight. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NO_x and VOCs. Breathing ozone can trigger a variety of health problems, particularly for children, the elderly, and people of all ages who have lung diseases such as asthma. Ground level ozone can also have harmful effects on sensitive vegetation and ecosystems (EPA 2018g).

Sulfur Dioxide. The NAAQS for SO₂ are designed to protect against exposure to the entire group of sulfur oxides (SO_x). SO₂ is the component of greatest concern and is used as the indicator for the larger group of gaseous SO_x. Emissions that lead to high concentrations of SO₂ generally also lead to the formation of other SO_x. The largest sources of SO₂ emissions are from fossil fuel combustion at power plants and other industrial facilities. Other sources include industrial processes such as extracting metal from ore; natural sources such as volcanoes; and locomotives, ships, and other vehicles and heavy equipment that burn fuel with a high sulfur content. Short-term exposures to SO₂ can harm the human respiratory system and make breathing difficult. Children, the elderly, and those who suffer from asthma are particularly sensitive to these effects (EPA 2018g).

Lead. Sources of lead emissions vary from one area to another. At the national level, major sources of lead in the air are ore and metals processing and aircraft operating on leaded aviation fuel. Other sources are waste incinerators, utilities, and lead-acid battery manufacturers. The highest air concentrations of lead are usually found near lead smelters. Once inhaled or ingested, lead distributes throughout the body in the blood and is accumulated in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. The lead effects most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults. Infants and young children are especially sensitive to even low levels of lead. Levels of lead in the air decreased by 98% between 1980 and 2014 as a result of regulatory efforts, including the removal of lead from motor vehicle gasoline (EPA 2018g).

PM₁₀ and PM_{2.5}. PM includes a mixture of solid particles and liquid droplets found in the air. These particles come in many sizes and shapes and can be made up of hundreds of different chemicals. Some are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks, or fires. Most particles form in the atmosphere as a result of complex reactions of chemicals such as SO₂ and NO_x, which are pollutants emitted from power plants, industries, and automobiles. Ammonia is one such chemical that reacts with SO_x and NO_x, creating ammonium sulfate and ammonium nitrate, and is a leading contributor to PM nonattainment in parts of Utah and Idaho. The primary source of ammonia is agriculture, where it is used as a fertilizer and is also results from animal waste. PM contains microscopic solids or liquid droplets that can be inhaled and cause serious health problems. Particles less than 10 micrometers in diameter pose the greatest problems because they can get deep into your lungs, and some may even get into your bloodstream. Fine particles (PM_{2.5}) are the main cause of reduced visibility (haze) in parts of the United States, including areas that are valued for their pristine nature, such as National Parks and Wilderness Areas (EPA 2018g).

2.6.2 Hazardous Air Pollutants Defined

The U.S. Congress amended the Federal Clean Air Act in 1990 to address a large number of air pollutants that are known to cause or may reasonably be anticipated to cause adverse effects to

human health or adverse environmental effects. Congress initially identified 188 specific pollutants and chemical groups as HAPs and has modified the list over time.

The Clean Air Act requires control measures for HAPs. National emissions standards for HAPs are issued by the EPA to limit the release of specified HAPs from specific industrial sectors. These standards are technology based, meaning that they represent the maximum achievable control technology that is economically feasible for an industrial sector.

The Clean Air Act defines a major source for HAPs to be one emitting 10 tons per year of any single hazardous air pollutant or 25 tons per year of any combination of HAPs.

2.6.3 Volatile Organic Compounds Defined

VOCs are any compound of carbon, excluding CO, CO₂, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.

2.6.4 Airsheds

Airsheds are geographic areas that, because of topography, meteorology, and/or climate, are frequently affected by the same air mass. Additionally, airshed are areas subject to similar air pollution conditions. The vertical extent of an airshed typically extends from ground level upwards to the boundary layer, although variations in the temperature profile, topography, and vertical mixing may alter the height of an airshed.

2.6.5 Emissions Sources Identified

Regional air quality is influenced by a combination of factors, including climate, meteorology, the magnitude and spatial distribution of local and regional air pollution sources, and the chemical properties of emitted pollutants. Within the lower atmosphere, regional and local scale air masses interact with regional topography to influence atmospheric dispersion and the transport of pollutants.

The BLM Canyon Country District has existing sources of air pollution that emit ozone precursor gases and PM, the two primary pollutants of concern near the Shash Jáa and Indian Creek Units. Ozone is a regional problem typical in the western States, as precursor gases (NO_x and VOCs) from forest fires, shipping lanes, electric power generation, oil and gas production, and a conglomerate of other sources combine under certain meteorological conditions to form ozone. PM is another issue during dust storms or when kicked up from other activities in this dry region and is the major contributor to the PM issue as emissions shown in Table 2.

Prescribed fire and naturally caused fires are sources of air pollutants in the Planning Area. Prescribed burning is a useful tool for resource management and may be used to achieve a variety of objectives, such as restoring a fire-dependent ecosystem, enhancing forage for cattle, improving wildlife habitat, preparing sites for reforestation, or reducing hazardous fuel loads. However, fire, for any of these reasons, will produce smoke and other air pollutants.

Short-term effects on air quality from prescribed burns include a general increase in PM and ozone precursor emissions. Land managers recognize that smoke management is critical to avoid air quality intrusions over sensitive areas or visibility problems. Vegetation management is an active part of fire management techniques, and long-term effects of prescribed burning include a reduction in PM and ozone precursor emissions specific to wildfire. As a result of careful

management, there is usually less smoke from a prescribed fire than from a wildfire burning over the same area.

Any smoke emissions resulting from prescribed burning projects or treatments in the Shash Jaa and Indian Creek Units are managed in compliance with guidelines in the Utah Smoke Management Plan and interagency group program. Active group participants include various Federal and State agency land managers and the UDAQ. The purpose of this program and the Utah Smoke Management Plan is to ensure the implementation of mitigation measures to reduce the impacts on public health and safety and visibility from prescribed fire and wildland fire used for resource benefits. Compliance with the Utah Smoke Management Plan is the primary mechanism for land managers to implement prescribed burns while ensuring compliance with the Clean Air Act.

Regional PM₁₀ and PM_{2.5} levels are likely a result of fugitive dust sources. The BLM regularly authorizes projects that, without adequate mitigation measures applied, would have the potential to raise levels of fugitive dust. Locations vulnerable to decreasing air quality include the immediate operation areas around surface-disturbing activities such as energy and mineral development, construction of major rights-of-way (ROW) projects, farm tilling, and local population centers affected by residential and light industrial emissions. Fugitive dust is likely to occur naturally across the Planning Area during high-wind events. Areas such as dry lakebeds, deserts, dunes, and recovering wildfire areas are prone to high-wind dust events.

2.6.6 *Attainment/Nonattainment/Maintenance Areas*

As described in Section 2, all of the Planning Area is in attainment or unclassifiable for each of the NAAQS.

2.6.7 *Conformity Analysis*

Section 176(c) of the Clean Air Act requires that Federal actions conform to the appropriate State Implementation Plan (SIP). A SIP is a plan developed at the State level that provides for the implementation, maintenance, and enforcement of NAAQS and is enforceable by the EPA. The EPA has promulgated rules establishing conformity analysis procedures for transportation-related actions and other general Federal agency actions (40 Code of Federal Regulations Parts 6, 51, and 93). The EPA general conformity rule requires preparation of a formal conformity determination document for Federal agency actions that are undertaken, approved, or funded in Federal nonattainment or maintenance areas when the total net change in direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. Because the Planning Area is not in a maintenance or nonattainment area, Clean Air Act conformity guidelines do not apply.

2.6.8 *Air Pollutant Concentration Monitoring*

Air pollutant concentration monitoring for the Planning Area was included as Table 3.

2.6.9 *Prevention of Significant Deterioration*

2.6.9.1 NEARBY CLASS I AREAS

Class I areas were included as Table 6.

2.6.9.2 SENSITIVE CLASS II AREAS

Sensitive Class II areas were included as Table 7.

2.6.10 Locations of Sensitive Air Quality Areas within and Outside the Planning Area

Sensitive air quality areas include Canyonlands National Park, adjacent to the Indian Creek Unit to the west; the Dark Canyon Wilderness Area, in the Manti-La Sal National Forest between the Shash Jáa and Indian Creek Units; the Glen Canyon National Recreation Area, located west of Canyonlands National Park; Hovenweep National Monument, located approximately 25 miles east of the Indian Creek Unit; and Natural Bridges National Monument, located west of the Shash Jáa Unit, west of the Manti-La Sal National Forest.

2.6.11 Sensitive Populations

Populations that may be sensitive to air quality include children, the elderly, and people with asthma or other cardiovascular issues. There are no sensitive populations who reside in the Planning Area. Nearby sensitive populations may be found in the communities surrounding the Planning Area, and sensitive populations may visit the Planning Area. Trends

Federal agencies have collected data near the Shash Jáa and Indian Creek Units related to pollution concentrations, visibility, and atmospheric deposition. Trends data is provided for each of these areas below.

2.6.12 Air Pollutant Concentration Monitoring

Data collected at Canyonlands National Park, Zion National Park, and Mesa Verde National Park show that recent ozone concentrations near the Planning Area remain below the NAAQS (Figure 1).

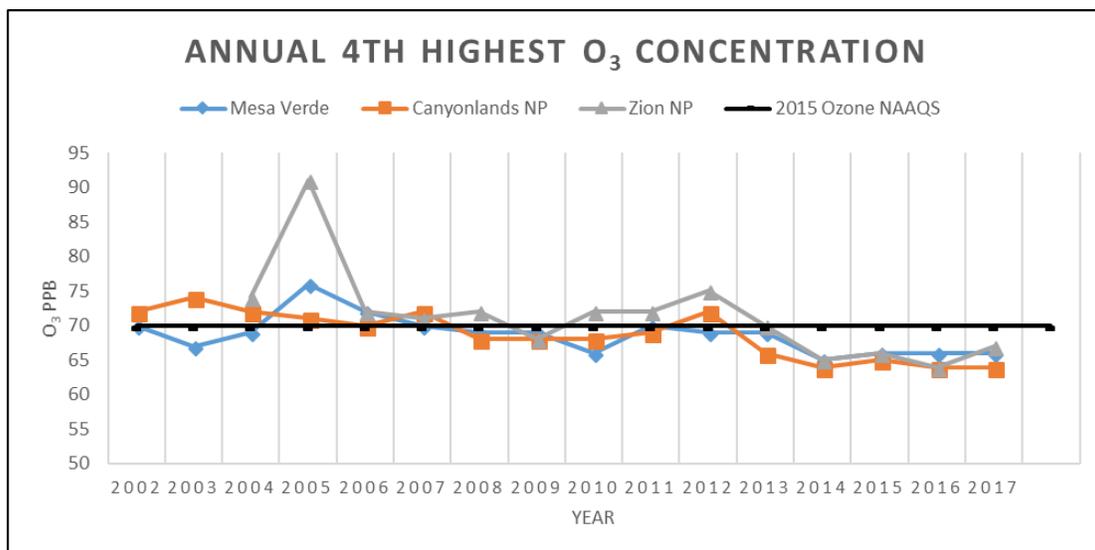


Figure 1. Regional ozone concentrations and 2015 8-hour ozone National Ambient Air Quality Standards.

The trend from 2002 through 2017 shows a decrease in ozone concentrations at these National Parks. However, while current ozone concentrations are below the NAAQS, they are still near the standard, and the historic data record shows concentrations that would exceed the current ozone standard.

No other criteria pollutant concentrations are monitored in or near the Planning Area.

2.6.13 Air Quality and Air Quality Related Values

Visibility. Visibility trends data are available from the NPS for Canyonlands National Park, adjacent to the Planning Area. For 1988–2015, the trend in visibility at Canyonlands National Park improved on both the 20% clearest days and the 20% haziest days (Table 8, Figure 2). The Clean Air Act visibility goal requires visibility improvement on the 20% haziest days, with no degradation on the 20% clearest days.

While some visibility impairments are the result of natural sources such as windblown dust and soot from wildfires, which cannot be controlled, human-made sources of pollution can also impair visibility. These include motor vehicles (organic carbon), electric utility and industrial fuel burning (sulfates and particulates), and manufacturing operations (sulfates and fine PM [i.e., dust]). Visibility in Canyonlands National Park is most influenced by sulfates, fine PM, and organic carbon (NPS 2018). The visibility improvements seen over the past decades are the result of implementing State and Federal stationary and mobile source regulations.

Table 8. Long-term Trends in Annual Deciview (dv) on Clearest and Haziest Days

Park	Clearest Days		Haziest Days		Number of Valld Years	First Year of Data	Last Year of Data
	Slope (dv/year)	Significant	Slope (dv/year)	Significant			
Canyonlands National Park	-0.12	Yes	-0.10	Yes	25	1990	2015

Source: NPS 2018.

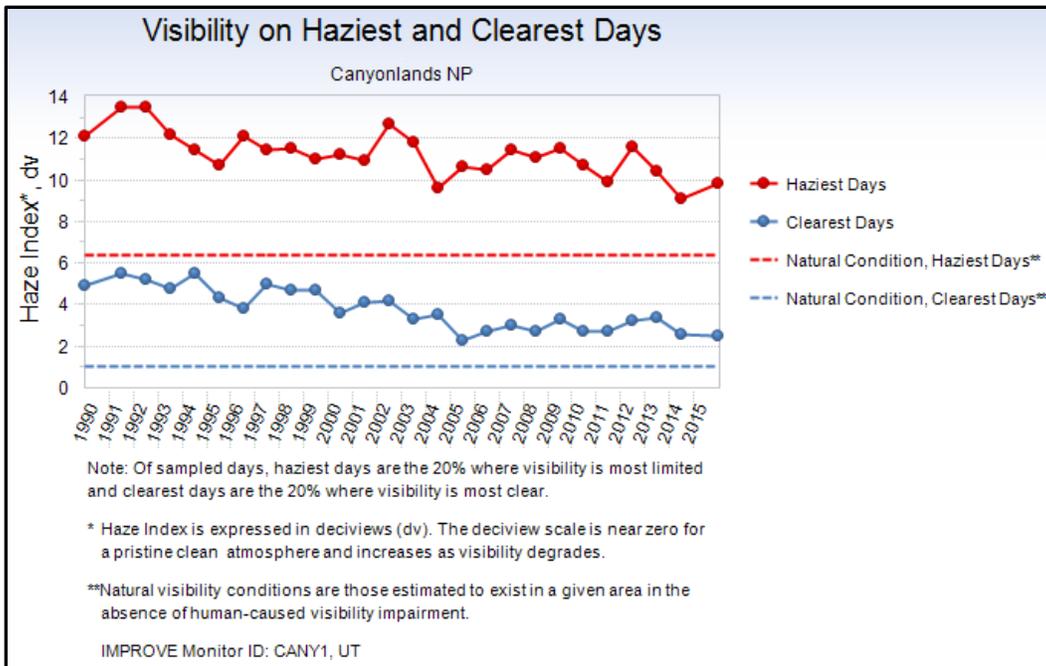


Figure 2. Canyonlands National Park visibility trends (1998–2015).

Atmospheric Deposition. Total deposition refers to the sum of airborne material transferred to the Earth's surface by both wet and dry deposition. The primary gases involved with inorganic nitrogen deposition include ammonia, NO_x, and nitric acid, while the primary particles are nitrate and ammonium. Total nitrogen deposition is calculated by summing the nitrogen portion of the wet and dry deposition of nitrogen compounds, and total sulfur deposition is calculated by summing the sulfur portion of the wet and dry deposition of sulfur compounds.

Total deposition has been measured at Canyonlands National Park from 1995 through 2009. Total nitrogen deposition has ranged from 1.7 to 2.2 kilograms/hectare-year since 1996. Total nitrogen deposition of 3 kilograms/hectare-year represents the total pollution loading where acidification is unlikely and “below which a land manager can recommend a permit be issued for a new source unless data are available to indicate otherwise” (Fox et al. 1989).

Table 9 provides long-term trends in wet-deposition concentration. Nitrate deposition to terrestrial systems can cause chemical alterations to soil, affecting microorganisms and native vegetation. Ammonium concentrations for Canyonlands National Park indicates a statistically significant degrading trend. Nitrate deposition at the park shows a statistically significant improvement. Canyonlands National Park also indicates a statistically significant improving air quality trend for sulfate concentrations.

Table 9. Long-term Trends in Deposition

Park	Ammonium		Nitrate		Sulfate		Date Range
	Slope (meq/liter/yr)	Significant	Slope (meq/liter/year)	Significant	Slope (meq/liter/year)	Significant	
Canyonlands National Park	0.33	Yes	-0.6	Yes	-0.28	Yes	1998–2015

Source: NPS 2018.

Note: Meq/liter/yr = milliequivalents per liter per year.

2.7 Forecast

2.7.1 Air Quality and Air Quality Related Values

Currently, air quality is good within the Planning Area; however, because the EPA is continually reassessing air quality standards, compliance may be harder to achieve in the future, making constant and effective planning and management for the control of specific project pollutant emissions more challenging.

The forecast for the Planning Area is for increased tourism and recreation. The increased travel to the area will result in increased fuel consumption, with the trend for increased levels of VOCs, CO, ground-level ozone, and sulfur oxide emissions. With increased vehicular recreation in the region and demand for utility-scale ROWs, fugitive dust will likely increase across the Planning Area. Fugitive dust will also increase if climate change yields warmer and drier conditions. If, as some predict, increased precipitation accompanies climate change, the increase in precipitation might help to mitigate temperature increases, resulting in a less radical increase in fugitive dust.

2.7.2 Agency Activities

Two primary features related to air quality in the Planning Area are ozone and fugitive dust. While ozone concentration levels are currently below the NAAQS and trending downward, they have in the past exceeded the current NAAQS of 0.07 ppm. The planning area is prone to high winds from the south and southwest in the spring and summer seasons. Fugitive dust from wildfire areas is also a concern.

The BLM and USFS regularly authorize projects that have the potential to raise levels of fugitive dust, PM₁₀, and PM_{2.5}. Locations vulnerable to decreasing air quality include the immediate operation area around surface-disturbing activities such as energy and minerals development, the construction of major ROW projects, farm tilling, and local population centers affected by residential and light industrial emissions. Avoiding areas with sensitive soils prone to blowing and identifying and implementing best management practices and other mitigation measures are key to minimizing fugitive dust.

Another key feature for air quality are areas that have been designated as Class I or sensitive Class II under the PSD program. There is one Class I area near the Planning Area (Canyonlands National Park, under the administration of the NPS) and three sensitive Class II areas (Natural Bridges National Monument, under the administration of the NPS; Dark Canyon Wilderness Area, under the administration of the Manti-La Sal National Forest; and Hovenweep National Monument, under the administration of the BLM).

3 CLIMATE, CLIMATE CHANGE, AND METEOROLOGY

3.1 Climate Indicators

3.1.1 Climate

Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. A region's climate is affected by its latitude, terrain, and altitude, as well as nearby waterbodies and their currents. Climate is both a driving force and a limiting factor for biological, ecological, and hydrologic processes, as well as for

resource management activities such as disturbed site reclamation, wildland fire management, drought management, rangeland and watershed management, and wildlife habitat administration.

3.1.2 Climate Change

Climate change is defined by the Intergovernmental Panel on Climate Change (IPCC) as “a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcing such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use” (IPCC 2013).

3.1.3 Greenhouse Gases and the Greenhouse Effect

Greenhouse gases (GHGs) are chemical compounds in the Earth’s atmosphere. Through complex interactions on a regional and global scale, these GHG emissions cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the Earth back into space.

Some GHGs occur both naturally and through human activities, while others are created and emitted solely through human activities. Naturally occurring GHG compounds are carbon dioxide (CO₂), methane, nitrous oxide (N₂O), ozone, and water vapor. Carbon dioxide, methane, and N₂O are produced naturally by the following processes:

- Respiration and other physiological processes of plants, animals, and microorganisms
- Decomposition of organic matter
- Volcanic and geothermal activity
- Naturally occurring wildfires
- Natural chemical reactions in soil and water

Carbon dioxide, methane, and N₂O are also produced by industrial processes, motor vehicles and other transportation sources, urban development, agricultural practices, and other human activities.

3.2 Current Conditions

3.2.1 Climate of the Ecoregion and Planning Area

Climate of the Colorado Plateau Ecoregion. Ecoregions are large areas of similar climate where ecosystems recur in predictable patterns. The Planning Area is within the Colorado Plateau ecoregion. The Colorado Plateau ecoregion covers the southeastern half of Utah, western Colorado, northern New Mexico, and northwestern Arizona. A Rapid Ecoregional Assessment (REA) has been completed for the Colorado Plateau. The REA is important because it is the primary source of climate change assessment information related to the Planning Area.

The climate of the Colorado Plateau varies from north to south and from low to high elevations. In the north, the climate is closely tied to that of the Great Basin. Summers are hot with infrequent afternoon thunderstorms that tend to focus mostly on higher elevation areas. In the south, peak precipitation occurs in the winter and again in the summer because of moisture from southern monsoonal weather patterns. Spring and fall are generally the driest periods. Annual precipitation

amounts are less than 10 inches at the middle and lower elevations, while areas above 8,000 feet receive over 20 inches of precipitation. The few and highly scattered mountains that reach elevations near or over 11,000 feet can receive nearly 36 inches of precipitation. Temperatures also vary considerably in the ecoregion. In the southern and lower elevations, temperatures range from approximately 20 to 25° F in the winter to approximately 95° F in the summer. At middle and upper elevations, temperatures range from the low 60s and 70s in the summer, to the single digits and low teens in the winter.

Climate of the Planning Area. The Shash Jáa and Indian Creek Units are located in the Colorado Plateau physiographic province, which is located in southeastern Utah.

3.2.2 Precipitation (Rainfall and Snowfall)

The average annual precipitation of the Planning Area is 13.9 inches, with higher elevations receiving more precipitation. In the higher elevations, precipitation comes in the form of snow, with large accumulations in the late fall and winter. Snowmelt in the higher elevations is generally complete by mid- to late June. Afternoon thunderstorms, often resulting in flash flooding, are common from late spring through early fall. Across the Planning Area, summer precipitation is often in the form of short, intermittent thunderstorms, while winter precipitation results in an accumulated snowpack that infiltrates the soil and recharges aquifers. Precipitation data collected from 1889 through 2012 for four locations in the Planning Area are displayed in Table 10 (WRCC 2018).

Table 10. Precipitation Data for Five Locations in the Region

Station	Mean Winter	Mean Spring	Mean Summer	Mean Fall	Annual Mean	Annual High	Annual Low	Snowfall Annual Mean
Moab	2.0	2.3	2.1	2.6	9.0	16.4	4.3	10.0
Monticello	3.8	3.0	4.1	4.3	15.2	23.1	6.6	62.7
Blanding	4.0	2.6	3.0	3.8	13.3	24.4	4.9	38.3
Bluff	2.2	1.5	1.8	2.4	7.8	15.7	3.0	8.2
Natural Bridges National Monument	2.8	2.6	3.3	3.7	12.4	19.8	6.5	40.1

Note: Precipitation in inches.

3.2.3 Topography

The Shash Jáa Unit is generally bounded by the cliff rim just east of the Butler Wash Road (Road B262), the San Juan River to the south, the Wilderness Study Areas of Cedar Mesa to the west, the Bears Ears Buttes to the northwest, and South Long Point and Milk Ranch Point to the north. The Indian Creek Unit is bounded in general terms by the Abajo Mountains to the south, Canyonlands National Park to the west, Lockhart Basin to the north, and the Harts Point Road (B121) to the east. Elevations range from 4,200 feet at the San Juan River to 9,008 feet on the East Butte of the Bears Ears Buttes, located on the Manti-La Sal National Forest.

3.2.4 Seasonal Temperatures

The two Units experience wide temperature variations between seasons; temperatures also vary widely with altitude. Summer high temperatures in the upper elevations often reach 85° F, with

lows in the 50s. Lower elevation high temperatures can reach over 100° F. Winters are cold, with highs averaging 30° F to 50° F, and lows averaging 0° F to 20° F. Precipitation data collected from 1889 through 2012 for four locations in the Planning Area are displayed in Table 11 (WRCC 2018).

Table 11. Temperature (°F) Data for Five Locations in the Region

Station	General Location	Elevation (feet)	Summer Mean High	Summer Mean Low	Winter Mean High	Winter Mean Low	Extreme High	Extreme Low
Moab	Northeast of Indian Creek	4,025	95.4	60.1	45.9	21.1	114.0	-24.0
Monticello	Southeast of the Indian Creek Unit and northeast of the Shash Jáa Unit	6,820	80.9	50.5	37.6	16.1	101	-22.0
Blanding	East of the north end of the Shash Jáa Unit	6,040	86.2	55.2	41.8	19.7	110	-23
Bluff	East of the south end of the Shash Jáa Unit	4,318	93.5	59.1	45.9	20.4	109	-22
Natural Bridges National Monument	West of the Shash Jáa Unit	6,510	86.4	56.5	41.6	20.3	103	-14.0

3.2.5 Prevailing Wind Speed and Direction

Prevailing wind speeds for the Shash Jáa and Indian Creek Units rarely exceed 5 meters per second and vary seasonally in direction. Wind direction closer to Monticello is highly influenced by the local terrain; in the City of Monticello, located on the flanks of the Abajo Mountains, the winds predominately blow from the south or southwest. Because wind patterns in the area vary widely by seasons and the local terrain, the dispersion and transport of air pollutants varies in this region, depending on the location. Table 12 contains the average wind speed and prevailing wind direction by month for Moab’s Canyonlands Field Airport in Grand County, approximately 40 miles north of the Indian Creek Unit.

Table 12. Average Wind Speed (miles per hour) and Prevailing Wind Direction

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Moab Canyonland Airport (1998-2006)	4.0	5.2	6.9	9.2	8.9	8.7	7.2	6.8	6.3	5.4	4.4	3.7	6.3
Canyonlands Field Airport	NW	W	W	W	W	SW	SE	E	W	W	W	NW	W

Source: Midwestern Regional Climate Center (MRCC) 2018.

Note: E = east; NW = northwest; SE = southeast; SW = southwest; W = west.

3.2.6 Long-Term Climate Record Tables for Nearby Stations

Tables 10 and 11 provide information on precipitation and temperatures near the Planning Area for the period of record for those stations.

3.2.7 Wind Roses of Local Stations

A wind rose is a graphical representation of how wind speed and direction are typically distributed at a particular location. The wind rose for Canyonlands Field Airport, the nearest station location to the Planning Area for which wind data are available, is shown in Figure 3 (MRCC 2018).

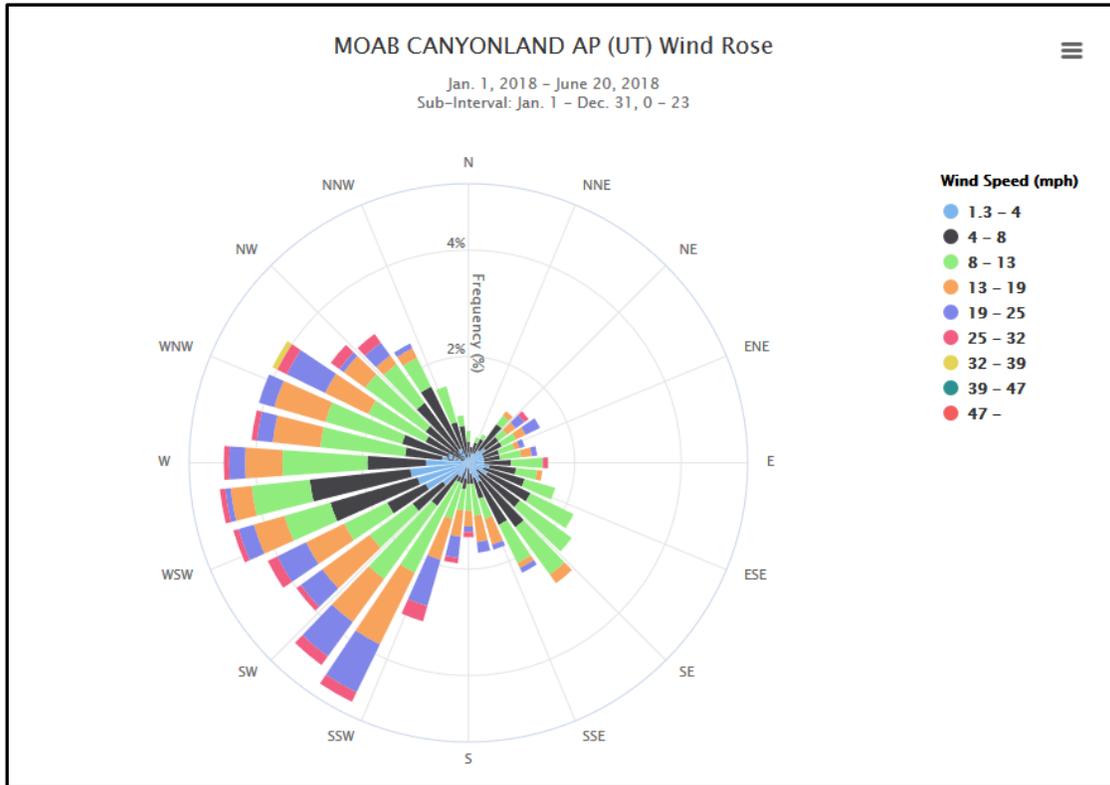


Figure 3. Canyonlands Field Airport wind rose.

3.2.8 Climate Change Synopsis

The consensus of scientific research is that increasing levels of GHG emissions are affecting global climate. Through a complex set of interactions, both on a regional and global scale, GHGs in the atmosphere have been known to cause a net warming effect of the atmosphere by decreasing the amount of heat energy radiating back to Earth from space. GHG levels have varied for millennia but have increased along with variations in climatic conditions as a result of the burning of fossil fuel from sources associated with human-made industrial processes.

Climate change can contribute to effects such as a rise in sea levels; changes in regional temperature and historic rainfall patterns; and changes in the frequency, severity, and duration of weather events. Observed climate change has impacted natural and human systems regardless of cause, implicating the sensitivity of natural and human systems to changing climate (IPCC 2014).

3.2.9 Sources of Greenhouse Gas Emissions

In the Planning Area, as in most of the United States, GHG emissions (primarily CO₂ and N₂O) result mainly from the combustion of fossil fuels in energy use. Energy use is largely driven by economic growth, with short-term fluctuations in its growth rate created by weather patterns that affect

heating and cooling needs and changes in the fuel used in electricity generation. Another GHG, methane, comes from landfills, coal mines, oil and natural gas operations, and agricultural operations, including livestock grazing. The breakdown of GHG emissions by source is shown in Figure 4 (EPA 2018h).

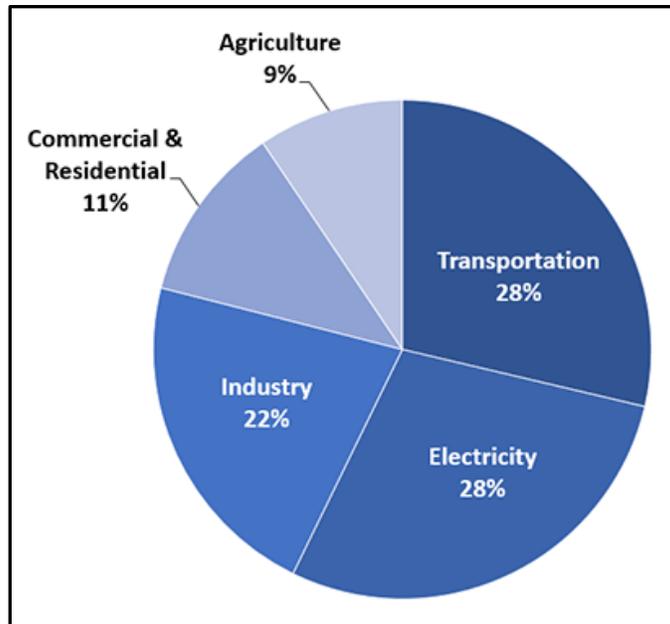


Figure 4. Total U.S. greenhouse gas emissions by economic sector in 2016.

Activities in the Planning Area that generate emissions of GHGs include the recreational use of combustion engines and seasonal wildfires that can produce large amounts of CO₂ and methane. In contrast, other activities can help sequester carbon emissions through the management of native vegetation, favoring perennial grasses that increase vegetative cover, reducing fuels from fire, and building organic carbon in the soil that act as carbon sinks.

3.2.10 Global Warming Potential

Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different GHGs (EPA 2018h). Specifically, it is a measure of how much energy the emissions of 1 ton of a GHG will absorb over a given period of time, relative to the emissions of 1 ton of CO₂. GHGs are presented using the unit of metric tons of CO₂ equivalent (MT CO_{2e}), a metric to express the impact of each different GHG in terms of the amount of CO₂, making it possible to express GHGs as a single number. For example, 1 ton of methane would be equal to 25 tons of CO_{2e} because it has a GWP over 25 times that of CO₂. The GWP accounts for the intensity of each GHG's heat-trapping effect and its longevity in the atmosphere. The GWP provides a method to quantify the cumulative effects of multiple GHGs released into the atmosphere by calculating CO_{2e} for the GHGs.

3.2.11 Global Warming Potential Summary of Greenhouse Gas Emissions

The GWP of each GHG is shown in Table 13.

Table 13. Greenhouse Gases and Their Global Warming Potentials

GHG	CO ₂	Methane	N ₂ O	Hydrofluoro-carbons	Perfluoro-carbons	Sulfur Hexafluoride
GWP	1	25	298	Up to 14,800	7,390–12,200	22,800

3.2.12 Greenhouse Gas Estimates by U.S. State (percent of national carbon dioxide equivalent)

Global, U.S., and Utah emissions are shown in Table 14.

Table 14. 2014 Global, U.S., and Utah Emissions (MT CO_{2e})

2014 GHG Emissions	
Global	45,740.70
National	6,371.10
Utah	77.58
% of National Emissions	1.22

Source: CAIT Climate Data Explorer 2015.

3.3 Trends

3.3.1 Climate and Climate Change

GHGs are necessary to life because they keep Earth’s surface warmer than it otherwise would be. However, as the concentrations of these gases continue to increase in the atmosphere, Earth’s temperature is climbing above past levels. Continuing a long-term warming trend, globally averaged temperatures in 2017 were 0.90°C (1.62°F) warmer than the 1951 to 1980 mean (National Aeronautics and Space Administration, Goddard Institute for Space Studies 2018), and second only to global temperatures in 2016. Global temperatures in 2017 (for the third consecutive year) were also more than 1.0°C (1.8°F) above late nineteenth-century levels. The IPCC concluded that “warming of the climate system is unequivocal” and “[i]t is extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increases in greenhouse gas concentrations and other anthropogenic forcings together” (IPCC 2013). Other aspects of the climate, such as rainfall patterns, snow and ice cover, and sea level, are also changing.

3.3.2 Annual Mean Temperature Change

The EPA’s 2016 report *Climate Change Indicators in the United States* (EPA 2016a) includes a map of temperature changes in the United States over the last century (Figure 5). As shown in this figure, the Planning Area has seen an average temperature increase of over 2.5 °F since 1901.

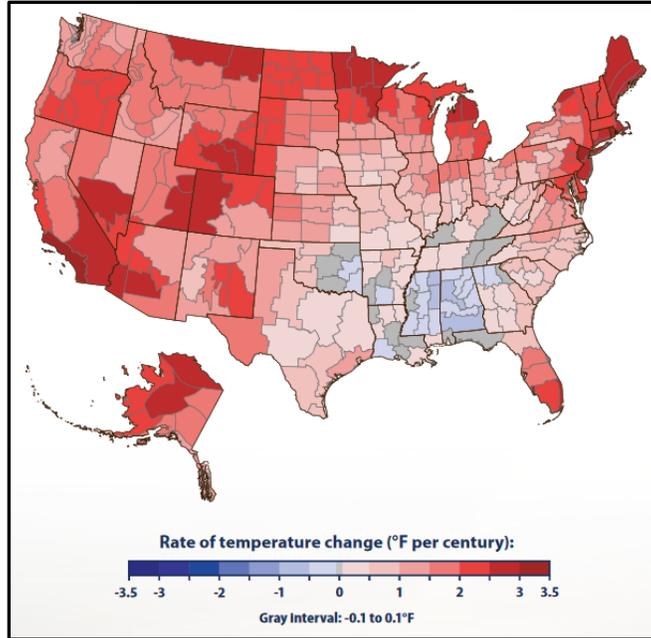


Figure 5. Rate of temperature change in the United States, 1901–2015 (EPA 2016a).

3.3.3 *Precipitation*

The EPA’s 2016 report *Climate Change Indicators in the United States* report (EPA 2016a) includes a map of precipitation changes in the United States over the last century (Figure 6). As shown in this figure, the Planning Area has seen an average decrease in precipitation of between 2 and 10% since 1901.

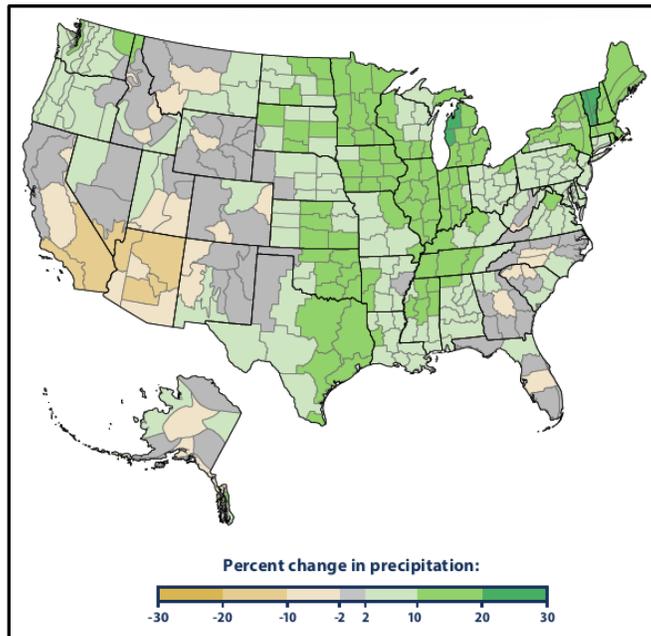


Figure 6. Change in precipitation in the United States, 1901–2015 (EPA 2016a).

The EPA's 2016 fact sheet *What Climate Change Means for Utah* (EPA 2016b) includes a map of snowpack changes in Utah over the last half century (Figure 7). As shown in this figure, the Planning Area has seen a decrease in snowpack since 1955.

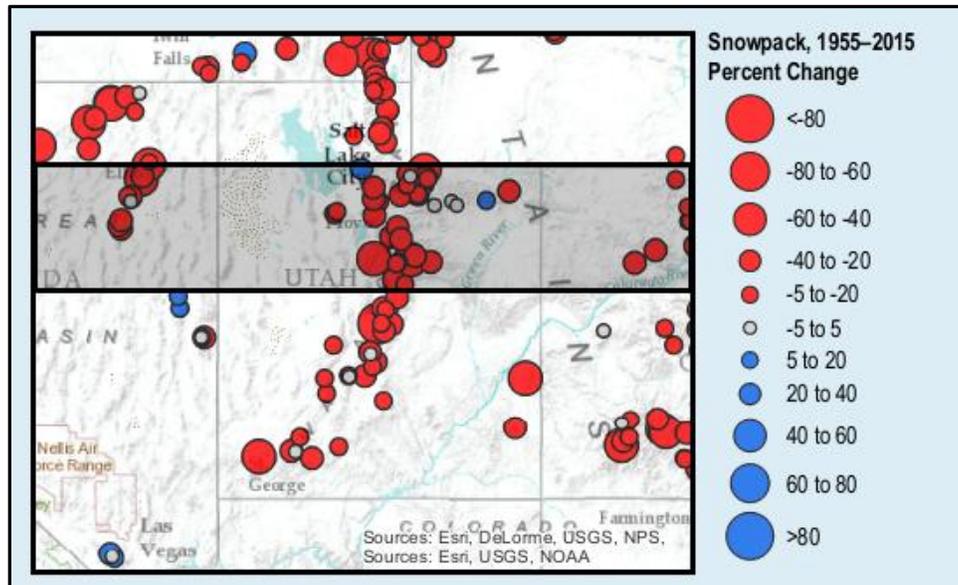


Figure 7. Percent change in April snowpack, 1955–2015 (EPA 2016b).

3.3.4 Agency Activities

There are no trends data available on climate, climate change, or GHG emissions specific to the Indian Creek and Shash Jáa Units. Trends in and near the Planning Area are described above.

3.4 Forecast

3.4.1 Climate and Climate Change

Climate change modeling predictions show that the ecoregion is expected to undergo general warming over the entire region, with the greatest warming occurring in the southern portion of the ecoregion, with average winter temperatures increasing more than average summer temperatures (Bryce et al. 2012). Climate change modeling predicts up to a 0.6 °C increase (2015–2030) and 1 °C increase (2045–2060) in average summer temperatures in the northern portion of the ecoregion and up to a 0.8 °C increase (2015–2030) and 1.2 °C increase (2045–2060) in the southern portion of the ecoregion (Bryce et al. 2012).

Precipitation is expected to decline throughout much of the year during the 2015 to 2030 time period (with the exception of several months in the fall), with severe drought likely to occur in some areas. The 2045 to 2060 time period remains drier (or comparable to historic conditions) during most of the year, but sporadic wetter months (e.g., February, June, and October) could result in overall increases in annual precipitation in some areas (Bryce et al. 2012).

Figures 8 and 9 show the long-term potential for climate change within the Indian Creek and Shash Jáa Units, respectively. The Indian Creek Unit shows primarily a very low to moderate potential for long-term climate change, with the exception of the southern portion of the Unit showing a very high potential. The climate change potential in the Shash Jáa Unit ranges from moderate to very high.

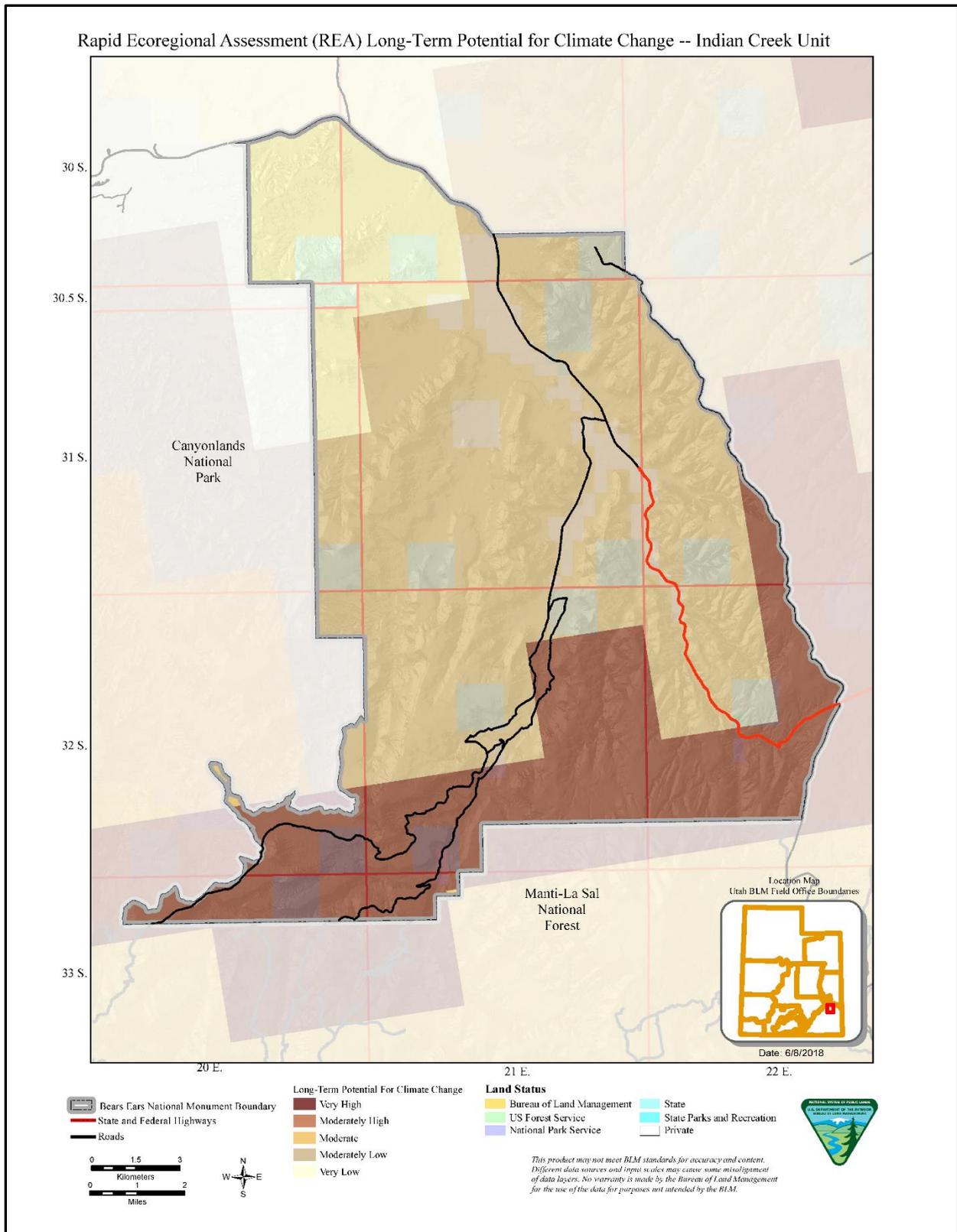


Figure 8. Rapid Ecoregional Assessment long-term potential for climate change – Indian Creek Unit.

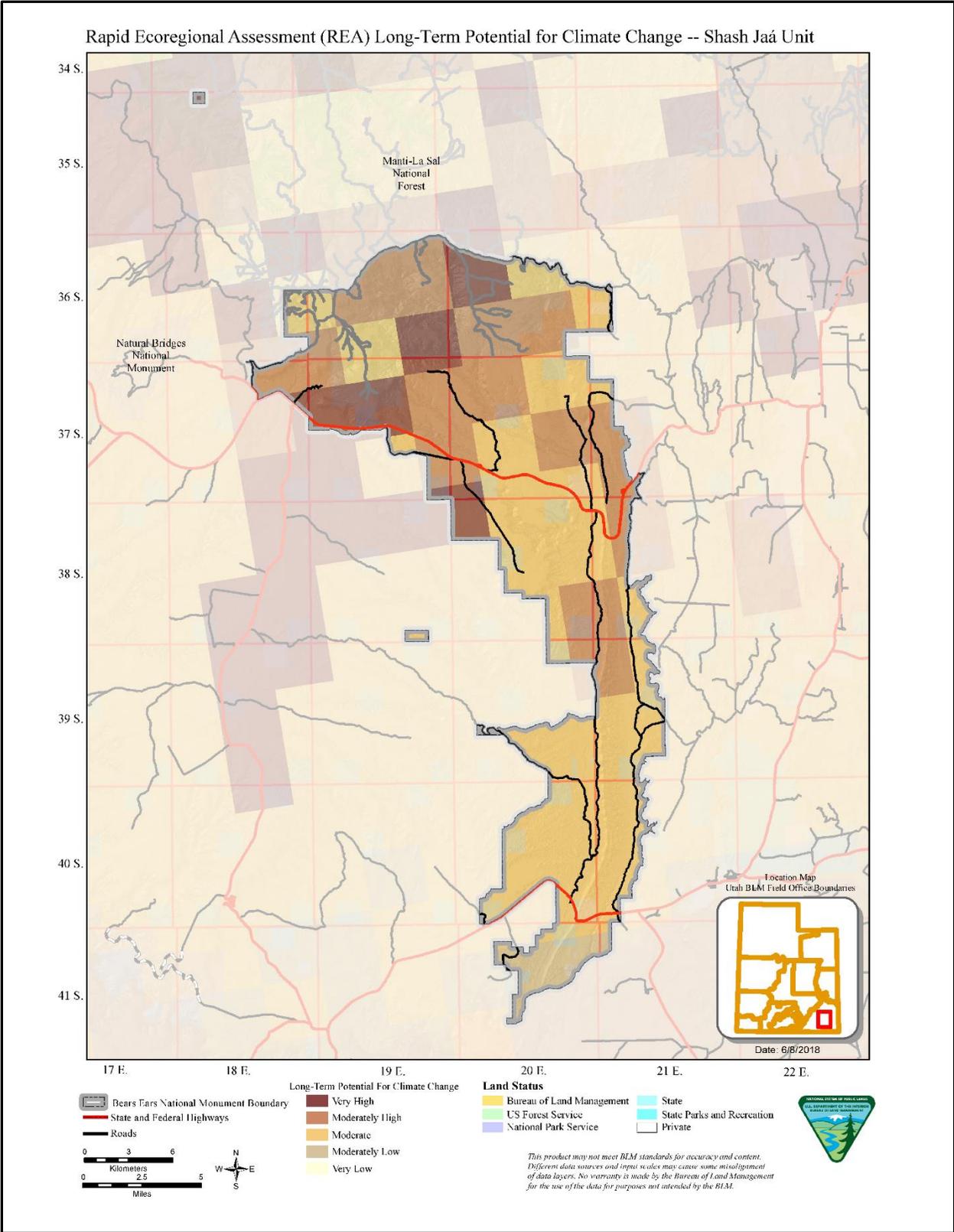


Figure 9. Rapid Ecoregional Assessment long-term potential for climate change – Shash Jáa Unit.

Overall, the southern portion of the ecoregion is expected to experience more extreme long-range climate change effects than the northern portion of the ecoregion. This is because the northern portion of the ecoregion is north of the influence of the summer monsoon; it may also be considered transitional to the mid- and northern latitudes, where climate change predictions may differ from those for the southwestern region (Bryce et al. 2012). Some models predict that winters in middle latitudes will be wetter as well as warmer (Miller et al. 2011).

3.4.2 Agency Activities

Climate change is an aspect that is difficult to address on a regional or national level, let alone at a local level, such as in the Planning Area. Key features of the Planning Area are vegetation, wildlife, soil resources, water resources, and potential resource development. The BLM and USFS should make a constant and consistent effort to maintain vegetative and soil communities in good health. Healthy soils and vegetation—particularly woodlands and forests—are important in storing carbon and preventing its release into the atmosphere. Unhealthy soils and plant communities, with large amounts of vegetation that is either overused and lacking productivity or, conversely, underused and high in oxidized material, cannot store but will release carbon into the atmosphere. A second aspect to maintaining healthy vegetative communities is their inherent resistance to catastrophic wildfires. Resource activities such as mining or oil and gas development may contribute to climate change.

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APPENDIX M
Monitoring Strategy



1 MONITORING STRATEGY

1.1 Introduction

This appendix provides an overview of the Bears Ears National Monument (BENM) monitoring protocol to meet the established objectives of the Monument Management Plans (MMPs) for resources and objects within BENM. Land use plan monitoring is the process of 1) tracking the implementation of land use planning decisions (implementation monitoring), and 2) collecting the data/information necessary to evaluate the effectiveness of land use planning decisions (effectiveness monitoring). Monitoring documents the Bureau of Land Management's (BLM's) and U.S. Forest Service's (USFS's) progress toward full implementation of the land use plan and the achievement of desired outcomes.

Conditions may change over the life of the land use plans, and such changes may require adaptive management to protect resources and minimize resource conflicts. To address changing conditions and provide management flexibility that incorporates best management practices (BMPs) (see Appendix I: Best Management Practices), the BLM and USFS review the effectiveness of management actions, assess the current resource conditions, and, if needed, alter management actions.

The regulations in 43 CFR 1610.4-9 require that land use plans establish intervals and standards for monitoring and evaluations based on the sensitivity of the resource decisions involved. Additionally, BLM Manual 6220 requires that land use plans for National Monuments analyze and consider measures to ensure that objects and values are conserved, protected, and restored. Specifically, plans must include a monitoring strategy that identifies indicators of change, methodologies, protocols, and time frames for determining whether desired outcomes are being achieved.

Giving consideration to staffing and funding levels, monitoring will be prioritized consistent with the goals and objectives of the BENM MMPs in cooperation with local, State, other Federal agencies, and the Monument Advisory Committee.

1.2 Data Collection

In cooperation with local, State, other Federal agencies, scientific academia, nongovernmental agencies, and volunteers, the BLM and USFS will collect, analyze, and report monitoring data that allow for the determination of cause and effect, conditions, trends, and predictive modeling of land use authorizations. Monitoring methods are implemented to collect data that establish current conditions and reveal any change in the indicators. Monitoring techniques consider when, where, and frequency. The data collected through monitoring provide a variety of information applicable to one or more resource uses. The Resource Monitoring section of this document (Section 1.5) contains additional information on protocols for resources. To increase effectiveness and efficiency and eliminate duplication, monitoring methods will address as many resources as possible. The BLM and USFS will collaborate with cooperating agencies and permittees to collect and share data.

1.3 Data Analysis

Data collected through this monitoring strategy will be analyzed to determine whether changes occur as a result of management actions. Data analysis will be conducted according to the suggested frequency for each resource, subject to time and funding. Data will be assessed to determine whether the resource conditions are meeting the goals identified in the MMP; whether a change has occurred and, if so, identifying the cause; and which appropriate action should be taken to achieve the desired outcome if the goal or objective is not being met. New technology and management methods will be reviewed to determine their applicability in modifying or replacing current management actions. The BLM and USFS will collaborate with cooperating agencies to assist in or perform this data analysis, as appropriate.

1.4 Adaptive Management

If data collection and analysis concludes that the desired outcome is not being achieved, the causal factors must be documented. A change or modification to management actions may be warranted to address these causes. The BLM and USFS will develop recommendations to be considered by management for continuation, modification, or replacement of current management actions, subject to NEPA and land use planning regulations. Because adoption of a new management action may also require changes in the monitoring plan, the BLM and USFS will also evaluate the effectiveness of the monitoring and data collection methods and recommend continued use, modification, or elimination of the methods proposed in this appendix. New technologies or a better understanding of information may also result in changes to this monitoring strategy.

1.5 Resource Monitoring

Table 1 identifies the indicators that will be monitored to detect change in resource conditions, the method or technique of monitoring, the locations for monitoring, the unit of measurement for monitoring, the frequency (i.e., timeframes) for monitoring, and the action triggers that indicate the effectiveness of the management action. Resources or programs within the table that apply to or include identified objects within BENM are highlighted in green. During implementation, BLM and USFS will rely on the indicators, methods, and frequencies listed below to demonstrate that objects within BENM are conserved, protected, and restored. Refer to Appendix A of the AMS for a detailed description of objects and values. Footnotes in Table 1 indicate monitoring activities that are also generally conducted by stakeholders or cooperating agencies.

Table 1. Resource Monitoring Activities

Resource	Record No.	Indicator	Method or Technique	Location	Unit of Measure	Frequency	Action Triggers
Air quality ⁴	M-1	Air quality	Ambient air sampling and air quality modeling	Established monitoring stations	Parts per million	Hourly to 24-hour samples in accordance with standards	Samples exceeding National Ambient Air Quality Standards
	M-2	Gaseous and particulate critical air pollutants	Emission inventory	Established monitoring stations	Pounds per hour and tons per year	Annually	Samples exceeding National Ambient Air Quality Standards or levels of concern
	M-3	Climate	Weather stations	Representative sample to detect weather patterns	Degrees, miles per hour, inches of precipitation, mb	Monthly and annually	Establish trends and use to correlate monitoring and research variables
Cultural resources ² (see Cultural Resources Monitoring Plan for specific information)	M-4	National Register of Historic Places eligible sites, including archaeological, historic, or cultural objects within BENM	Site inspection	Planning Area wide	Number and types of incidents of damage to cultural resources	Case-by-case basis	Disturbance as a result of land uses or vandalism, fire, and severe weather events such as flooding and erosion
Cultural resources ² (See Cultural Resources Monitoring Plan for specific information)	M-5	Vulnerable sites and archaeological, historic, or cultural objects within BENM	Comprehensive monitoring utilizing archaeologists, law enforcement, rangers, and site stewards	Cultural sites that have been previously identified as being impacted; cultural sites identified on maps, brochures, or other media that bring the site into public awareness; sites that are known to be popular for public visitation; a representative sample of sites known to be prone to impacts from predictable sources	Number and types of incidents of damage to cultural resources	Case-by-case basis	Disturbance (e.g., from vandalism, erosion, grazing, recreation, or other)
Fish and wildlife ³	M-6	Big game seasonal habitat	Aerial and field inspections	Crucial wildlife habitat areas	Numbers during occupancy periods	Annually	A change in numbers beyond the normal fluctuations
	M-7	Special status species occupancy and productivity	Aerial and field inspections. For fish: electrofishing, Passive Integrated Transponder (PIT) tags, and/or netting	Habitat areas and established buffer zones	Numbers during occupancy periods	Annually or biennially (fish)	A decline in numbers beyond the normal fluctuations
	M-8	Threatened and endangered species occupancy and productivity	Aerial and field inspections. For fish: electrofishing, PIT tags, and/or netting	Habitat areas and established buffer zones	Numbers during occupancy periods	Annually or biennially (fish)	A decline in numbers beyond the normal fluctuations
	M-9	Macroinvertebrate species and communities	Collect macroinvertebrates samples following National Aquatic Monitoring Center sampling protocols. At aquatic Assessment, Inventory, and Monitoring (AIM) sites using reach-wide or targeted riffle methods	Perennial stream reaches and spring-fed pools	Species and condition of macroinvertebrate communities, observed versus expected (O/E) ratios of macroinvertebrate species, etc., as determined by UDWQ staff in relation to state water quality standards	Sample in midsummer every 1 to 5 years	Declining presence or absence of macroinvertebrates that indicate good water quality in the stream; low or declining observed values versus expected values; presence of invasive species; stream not meeting state water quality standards, particularly the aquatic habitat parameters
	M-10	Neo-tropical bird habitat	Site visit	Planning Area wide	Numbers during occupancy period	As needed	Declining trend in habitat occupancy
	M-11	Raptors	Site visit	Planning Area wide	Nest occupancy rate	As needed	Declining trend in nest site occupancy
	M-12	Special status species	Site inspection	Special status species habitats	Population and trend	As needed	Declining trend in populations
	M-13	Bald eagle	Survey	Suitable bald eagle nesting habitat or identified concentration areas	Detection of bald eagle presence	As needed	Declining trend in nest site or habitat occupancy
	M-14	Mexican spotted owl	Survey	Designated critical habitat, identified protected activity centers, or breeding habitats where it has been determined that there is a potential for take	Detection of Mexican spotted owl presence	As needed	Adverse impacts on individuals or habitat Detection of Mexican spotted owl
	M-15	Southwestern willow flycatcher and western yellow-billed cuckoo	Surveys conducted by agency-approved personnel	Within habitat	Species occupancy data and distribution information	As needed	Adverse effects on southwestern willow flycatcher and habitat from ground-disturbing activities, including, but not limited to, recreation, mining, and oil and gas activities Species occurrence is verified Any level of anticipated take or incidental take
Geology	M-16	Geological objects within BENM	Survey	Planning Area wide	Acres of inventoried objects	As needed	Loss or damage to geologic objects as a result of human or natural causes
Lands with wilderness characteristics	M-17	Presence or absence of wilderness characteristics	Inventory in accordance with BLM Manual 6310	Planning Area wide	Acres of inventoried lands	Per BLM Manual 6310 guidance	Loss of acres of lands with wilderness characteristics that are managed for protection of wilderness characteristics
Lands recommended for wilderness on USFS-administered lands	M-18	Impacts to existing wilderness character	Field monitoring	Units recommended for wilderness	Acres of lands recommended for wilderness	Annually	Loss of acres of lands with wilderness characteristics that are managed for protection of wilderness characteristics

Resource	Record No.	Indicator	Method or Technique	Location	Unit of Measure	Frequency	Action Triggers
Paleontological resources	M-19	Significant paleontological resources and paleontological objects within BENM	Site inspection	Site	Degradation or loss of significant fossil resources	Annually	Loss or damage to significant fossil resources as a result of human or natural causes
Soil resources	M-20	SRH Standard 1	Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform. Soil stability tests indicate surface soil conditions.	Planning Area-wide where land use activities are occurring, especially on sensitive soil units or steeper slopes	Permeability rates, infiltration rates, soil stability classes	As required by the SRH	When monitoring and assessment indicate Standard 1 is not being met
Water resources	M-21	Surface water quality ⁴	Water chemistry sampling, bacteriological sampling, macroinvertebrate sampling following Utah Division of Water Quality (UDWQ) protocols for assessing water quality conditions. Aquatic AIM protocols can be used as indicators of water quality conditions for temperature, pH, specific conductance, total nitrogen/phosphorus, and macroinvertebrates.	All surface waters, including streams and springs	UDWQ parameters for state water quality standards, including milligrams/land tons per day, O/E macroinvertebrate communities, aquatic AIM reaches - O/E macroinvertebrates, temperature, pH, specific conductance, total nitrogen/phosphorous	Sampling in coordination with the UDWQ at priority sites, conducted on a monthly basis for a minimum of 1 year at a time; less frequent sampling can indicate impairment of state water quality standards. Aquatic AIM sites sampled once by the BLM every 5 years can be indicators of water quality conditions.	Water quality does not meet state standards
	M-22	Groundwater quality ⁴	Groundwater sampling	Water wells and piezometers	Water chemistry parameters, including specific conductivity and total dissolved solids (TDS)	Using either continuous loggers in wells or seasonal testing	Water quality conditions are degrading (i.e., increased conductivity or TDS levels)
	M-23	Stream channel geometry	Stream channel cross sections, Multiple Indicator Monitoring (MIM), long-term photo points; aquatic AIM protocols include measurements of bankfull height, floodplain height, floodplain connectivity, wetted width, bank angle, residual pool depth/length, slope, and bank stability.	Intermittent and perennial stream reaches, 100-year floodplains; aquatic AIM sample design reaches on perennial streams	Changes in stream channel characteristics (width, depth, sinuosity, streambank characteristics [e.g., bank sloughing]); change in Rosgen stream channel type	Stream channel cross sections or MIM studies would be repeated every 1 to 3 years; aquatic AIM sites sampled once by the BLM every 5 years	Conditions are moving away from proper functioning condition, conditions determined by MIM to be degrading or impaired (i.e., quantifiable changes in stream channel characteristics, including floodplain width-depth ratios, stream channel width, depth, sinuosity, longitudinal characteristics [pools versus riffles], etc.)
	M-24	Ground and surface water quantity	Water well levels and stream flow measurements; aquatic AIM protocols include measuring wetted width, pool length, depth, and thalweg depth profile	Water wells and shallow water wells (piezometers), perennial and intermittent streams, springs and seeps; AIM sample design reaches on perennial streams	Ground and surface water quantities measured in gallons per minute (gpm) or cubic feet per second (cfs)	On a monthly basis over the course of a full water year (October 1 to September 30)	Decreased stream or spring flows either seasonally or annually, decreased peak flows in spring, decreased water levels in water wells, decreased size of wetlands or riparian areas Adequacy for BLM- and USFS-administered resources and cultural/traditional uses; loss of aquatic refugia for aquatic species
	M-25	Water sources and streams identified as objects within BENM	Water quality sampling, water quantity measurements	Where present within BENM	Parameters described by UDWQ state water quality standards, streamflows (cfs or gpm), spring discharges (cfs or gpm), depth to groundwater in water wells or piezometers from surface	Monthly or seasonally	Any changes to water sources and streams, including water quality conditions, streambank stability, or channel geometry; any changes to water-dependent vegetation, including in hanging gardens and adjacent to seeps, and in riparian areas
	M-26	Precipitation	Weather stations	Representative sample to detect precipitation patterns	Inches of precipitation	Monthly, quarterly, and/or annually	Drought (periods of abnormally low rainfall)

Resource	Record No.	Indicator	Method or Technique	Location	Unit of Measure	Frequency	Action Triggers
Vegetation	M-27	Noxious weed and invasive plant trends ⁵	Remote sensing or site visit; terrestrial AIM plots	Priority areas; terrestrial AIM random sample design	Acres of established weeds and potential habitat areas. Terrestrial AIM - percent cover of invasive species, number of plots with high invasive species cover	Annually; terrestrial AIM sites every 5 years	Spreading or establishment of invasive species in new areas
	M-28	Wetland/riparian areas	Proper functioning condition; aquatic and terrestrial AIM protocols	All wetlands/riparian areas; aquatic AIM sample design	Riparian miles (lotic) or riparian acres (lentic); number of reaches with biological, physical, or chemical impairments	As-needed basis; aquatic AIM sites every 5 years, funding permitting	Not achieving proper functioning condition or not exhibiting movement toward achievement
	M-29	Vegetation treatments and large-scale invasive plant treatments	Pre- and post-treatment and controls monitoring per established USFS protocols	Within vegetation treatment areas	Effectiveness of vegetation treatments and large-scale invasive plant treatments	Pre- and post-implementation	Ability to meet objectives prescribed for treatment
	M-30	Vegetation condition	Nested Plot Frequency and/or terrestrial and aquatic AIM methods	Key areas and/or representative samples; terrestrial and aquatic AIM sample designs	Plant frequency, percent ground cover, trend; for AIM sites, compare against ecological site or other benchmark	Every 3 to 5 years; for AIM sites, once every 5 years, funding permitting	Downward trend
	M-31	Riparian areas within BENM	Proper functioning condition or Greenline/MIM, where applicable	Functioning at-risk and non-functioning riparian areas	Area (acres per linear feet)	As needed	Effects from surface-disturbing activities
	M-32	Desired species are maintained at a level appropriate for the site and species involved	Rangeland Health Assessment (Standard #3); terrestrial AIM protocol	Grazing allotment; terrestrial AIM sample design	Acres; terrestrial AIM sites - number of plots; individual plot cover estimates	As needed	When assessments indicate Standard 3 is not achieved nor progress being made toward achievement
	M-33	Springs, seeps, tinajas, and hanging gardens within BENM	Water quality sampling, water quantity measurements	Where present within BENM	Water quality parameters as described in UDWQ water quality standards, including specific conductivity, pH, temperature, etc.; water quantity measurements in gpm or cfs	Monthly or seasonally	Changes in water quantity or flows, decreasing water-dependent vegetation (species richness or overall density or aerial extent, encroachment of upland or invasive plant species, changes in water quality, including total dissolved solids, specific conductivity, temperature, etc.)
	M-34	Special status plant species - , relict, and rare and endemic plants	Site inspection on USFS Threatened, Endangered and Sensitive Plant Element Occurrence Protocol	Plant habitats	Population and trend	Annually	A declining trend in populations
	M-35	Threatened and endangered plant species	Surveys conducted by agency-approved and USFWS-approved personnel	Habitat areas	Population abundance, life stage, reproductive success, and distribution information	As needed; known populations may be monitored annually or biennially	Adverse impacts to individuals or habitat conditions
Fire	M-36	Fire fuels	Site inspection or Landfire	Wildland-urban interface and industrial interface areas	Acres	Annually or biennially	Presence of fire fuels that present a risk to communities and industrial sites
	M-37	Vegetation condition	Ecological site condition and trend studies or Landfire	Vegetation types where there is a history of fire in the ecosystem	Representative sample	Annually or biennially	Vegetation growth trend is moving away from desired conditions for the vegetation type
	M-38	Resource and property damage	Fire behavior	Individual fire	Fire temperature, flame length, burn rate, and acres burned	While the fire is burning	Acres burned and fire intensity that exceed the prescription
Visual resource management	M-39	Project conformance with VRM class objectives	Remote sensing or site visit; visual resource contrast rating from key observation points; visual simulations	Class I and II, areas on BLM-administered lands; Very High, High, Moderate, and Low scenic objective areas on USFS-administered lands	Measure the degree of contrasting elements against the surrounding natural elements of the landscape (color, form, line, etc.) before and after implementation of an action	Visual contrast ratings will be prepared for projects in visually sensitive areas; comparison of pre- and post-implementation data will evaluate the sufficiency of project design features in meeting VRM class objectives.	Project elements that exceed thresholds for meeting VRM and SMS class objectives
Forestry and woodland products	M-40	Forest health	Ecological site condition and trend	Forested lands	Representative sample area	Every 3 to 5 years	Disease, insect infestation, or encroachment of undesirable plant species threatens forest health
	M-41	Timber stands	Timber stand examination	Commercial forested areas	Board feet, age class, and damages	Every 10 to 20 years	Basal area growth does not meet timber type standards
Lands and realty	M-42	Realty authorization compliance	Site compliance inspection	Entire Planning Area	Number of site inspections	Annually	Noncompliance or nonuse

Resource	Record No.	Indicator	Method or Technique	Location	Unit of Measure	Frequency	Action Triggers
Livestock grazing	M-43	Vegetation condition	BLM- and USFS-approved monitoring methods (e.g., nested plot frequency); terrestrial and aquatic AIM protocols	Key areas in locations available to livestock grazing; terrestrial and aquatic AIM sample designs	Representative sample in grazing allotments; AIM - compare against ecological site or other benchmark	Every 3 to 5 years, as time and funding allow; AIM sites, once every 5 years, funding permitting	Conditions are not meeting goals and objectives for vegetation due specifically to livestock grazing management
	M-44	Livestock use	Monitor the intensity, duration, and timing of grazing use	Varies by allotment	Percent utilization and GRI score	Annual indicator (would not be done every year everywhere)	
	M-45	Standards for rangeland health	Rangeland health assessment (applicable standards Nos. 1-4)	Allotment	Acres	Every 10 years, as time and funding allow	When assessments indicate a standard is not achieved, nor progress being made toward achievement, and livestock grazing is a causal factor
Recreation	M-46	General recreation use; realization of desired beneficial outcomes	On-site inspection, visitor use data, surveys; document user conflicts or complaints. National Visitor Use Monitoring (NVUM) on USFS lands	Planning Area-wide with emphasis on Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs) with high visitation	Changes to desired recreation setting characteristics; changes in experiences and realized desired beneficial outcomes; changes in types, seasons, or levels of use. Consistent with ROS Classes on USFS-administered lands.	Prioritize areas and monitor higher priority areas: SRMAs, every 1 to 3 years and ERMAs with high visitation every 3 to 5 years NVUM every 5 years	When visitor surveys or public comments indicate that recreation area management objectives or recreation opportunity settings are not met; when desired settings, experiences, and beneficial outcomes are not realized; when change is causing undue or unnecessary degradation of the site or area; when change is causing goal interference and conflicts
	M-47	Developed/Concentrated recreational use	Inspect developed recreation sites and facilities; monitor developed sites to determine they are being managed to the standard on USFS lands	Recreation site	Condition of recreation sites, facilities, visits and visitor days	Annually	When change is causing undue or unnecessary degradation of facilities and use areas; public complaints
	M-48	Compliance with commercial authorization	Administrative review, site inspection	Activity site	Permit stipulations, resource conditions, and site restoration	During and after an event; annually for other commercial users	When noncompliance is determined or degradation of resources is occurring
Transportation	M-49	Roads and trails ⁶	Route management categories and maintenance levels; on-site inspection or remote sensing; traffic counter data; Tracs surveys for USFS system trails	Planning Area wide	Miles.	Per facility asset management system Condition Assessment Plans; Tracs survey every 5 years for USFS system trails	Conditions represent a hazard to life and property; route conditions do not meet identified road or trail standards
	M-50	Seasonal closures ³	Aerial and field inspections	Travel management areas with seasonal closures for wildlife	Acres.	Every 5 years	Changes in use of seasonal habitat requiring closure
	M-51	Off-highway vehicle disturbance; establishment of unauthorized vehicle routes	Remote sensing or site visit; traffic counter data	Travel management area; site-specific to area of disturbance	Miles of routes; acres of disturbance	Prioritize areas and monitor higher priority areas every 1 to 3 years and lower priority areas every 2 to 4 years	Disturbance is exceeding the baseline, accelerated soil erosion is occurring, and vegetation is being removed
Areas of Critical Environmental Concern	M-52	See other resource sections for relevant and important values (e.g., cultural, wildlife, etc.)	As prescribed for affected resource	Designated Areas of Critical Environmental Concern	As prescribed for affected resource	During 5-year evaluations	Undue or unnecessary degradation or loss of relevant and important resources as a result of human or natural causes
Wilderness Study Areas	M-53	Wilderness characteristics (size, naturalness, outstanding opportunities for primitive and unconfined recreation or solitude, supplemental values)	Site visits; aerial monitoring	Wilderness Study Areas	Miles of linear human intrusions; acres disturbed; impacts to wilderness characteristics identified by on-site visit or public comment	Monthly, unless an alternative monitoring strategy is adopted	Failure to meet the non-impairment standard or other objectives outlined in BLM Manual 6330
Inventoried roadless areas	M-54	Roadless character (absence of roads, size, outstanding opportunities for primitive and unconfined recreation or solitude, supplemental values)	Site visits; aerial monitoring	Arch Canyon IRA	Miles of linear human intrusions; acres disturbed; impacts to wilderness characteristics identified by on-site visit or public comment.-	Annually	Failure to meet the 2001 Roadless Rule

¹ Utah Division of Air Quality conducts data collection.

² The State Historic Preservation Officer conducts data collection.

³ Utah Division of Wildlife Resources conducts data collection.

⁴ Utah Division of Water Resources conducts data collection.

⁵ Utah Department of Agriculture and Food conducts data collection.

⁶ The county with jurisdiction conducts data collection.

In order to determine the effectiveness of the MMPs and the ability of the BLM and USFS to meet the goals and objectives (see the goals and objectives for each resource in Chapter 2 of the MMPs document), the standard protocols listed below will be used.

1.6 Cultural Resources

- Site stewards (i.e., citizens performing site stewardship) will be trained by an agency archaeologist. Cultural sites that are relevant and important values in Areas of Critical Environmental Concern and other selected sites will be monitored by the agency or site stewards at least annually. Sites with heavier traffic will have a goal of four visitations per year.
- Sites that are prone to vandalism and/or unauthorized camping will receive regular patrols and agency law enforcement rangers.

1.7 Fish and Wildlife

1.7.1 *Big Game*

- In conjunction with other Federal, State, or private agencies, will continue to monitor wildlife populations and habitats in the Planning Area. This will be done for individual species such as mule deer, elk, bighorn sheep, and pronghorn; and groups of species associated with source habitats such as sagebrush-steppe, juniper, and mixed conifer forest.

1.7.2 *Raptors*

- For raptors, nest site detection and monitoring will be conducted near high-use sites and near surface-disturbing projects, primarily with volunteers and as time and funding allow.

1.7.3 *Special Status Species – Wildlife*

- Follow U.S. Fish and Wildlife Service (USFWS) protocol for threatened and endangered species surveys/monitoring.
- Follow USFS protocol for a northern goshawk territory survey, inventory, and monitoring.
- As required by the Endangered Species Act, monitoring, using approved protocol, would be required on listed and non-listed special status species and their habitat that may be affected by agency authorization of any activities within that habitat.
- Monitor and protect known protected activity center sites according to USFWS recommendations and the Mexican spotted owl recovery plan.
- Monitor and protect known nesting sites according to USFWS recommendations and southwestern willow flycatcher recovery plan.
- Monitor and protect known nesting sites according to USFWS recommendations and yellow-billed cuckoo recovery plan.

1.8 Geological and Paleontological Resources:

- Review proposed activity plans/projects and associated maps.
- Determine location and cross reference existing geologic maps to determine the Potential Fossil Yield Classification of underlying bedrock. Note if known paleontological resource localities exist near the proposed activity.

- If the Potential Fossil Yield Classification of underlying bedrock is 4–5, a site survey must be completed by an agency official or agency-permitted paleontologist where the ground will be disturbed, with a 25-meter buffer surrounding the proposed disturbance. If fossils are found, locality forms should be filed with the UTSO and BENM or the Canyon Country District with all information that can be determined about the fossil (location, rock formation, type of fossil, description, map, and photographs, if possible).
- If no significant fossils are discovered in survey, a stipulation for inadvertent discovery should be added to the proposal (basically, if the fossil is uncovered during the proposed action, all activity must cease until an agency official or agency-permitted paleontologist can travel to the site and determine what and if any mitigation must occur; once mitigation is completed, activity can resume).
- If significant fossil(s) are discovered in survey, an agency official and/or agency-permitted paleontologist will determine what and if any mitigation must occur and begin mitigation. This can include rerouting trails/roads/other infrastructure or collection/excavation of the resource.
- All paleontological surveys will be documented regardless of whether or not a fossil is found.

1.9 Soil Resources, Vegetation, Special Status Species Plants, and Fire and Fuels

- Assessment, Inventory, and Monitoring (AIM) methods (MacKinnon et al. 2011) and/or upland trend monitoring for upland rangelands will be implemented for soil, vegetation, special species plants, and post-fire monitoring.
- The agencies will follow standard monitoring protocols and methods for measuring vegetation.
- Rangeland Health Assessments will be conducted as required in the *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997).
- Soil stability testing protocol can be found in Herrick et al. (2005).

1.10 Water

- Water quality sampling will be conducted as part of the Cooperative Program with the State of Utah Division of Water Quality (UDWQ), and data will be used to assess whether a stream is meeting state water quality standards.
- Macroinvertebrate sampling will be conducted to assess water quality conditions based on the observed versus expected ratio determined by the UDWQ following protocols described by the National Aquatic Monitoring Center.
- The AIM National Aquatic Monitoring Framework: Introducing the Framework and Indicators for Lotic Systems, Technical Reference 1735-1 (BLM 2015a), and AIM National Aquatic Monitoring Framework: Field Protocol for Wadeable Lotic Systems, Technical Reference 1735-2 (BLM 2015b), will be used to collect hydrological data as a one-time indicator of macroinvertebrates, nutrient levels, pH, specific conductance, temperature, wetted width, and thalweg depth.
- Multiple Indicator Monitoring (MIM) of stream channels and streamside vegetation (BLM Tech Reference 1737-23) will be conducted to assess conditions that may affect water quality conditions (i.e., streambank stability versus sediment loading). Establish MIM long term, and conduct monitoring every 3 to 5 years.

- Stream flow measurements will be collected to determine trends in water quantity following USGS protocols. Water levels in water wells will be monitored to assess trends in water quantity using calibrated measuring devices such as piezometers.
- Spring inventory and sampling procedures will follow the Springs Ecosystem Inventory Protocols and Springs Ecosystem Assessment Protocol (as described by Stevens et al. 2016).
- Establish long-term stream channel cross section study sites and repeat surveys every 3 to 5 years using *Stream Channel Reference Sites: An Illustrated Guide to Field Technique* (Harrelson et al. 1994).

1.11 Visual Resources

- Visual contrast ratings (BLM Form 8400-4) will be documented for projects in VRM Class I, II, III, and IV areas to monitor how visual resource inventory's scenic quality factor ratings are affected and update the inventory. Scenic integrity monitoring will be conducted for all proposed projects on USFS-administered lands.

1.12 Forestry & Woodland Products

- Reforestation surveys (typically in the first, third, and fifth years) will be conducted in artificial and natural regeneration treatments per the National Forest Management Act of 1976. Small-sale public use permits will be monitored to ensure compliance.
- Areas where woodland harvest is prohibited will be monitored to ensure compliance.

1.13 Riparian/Wetlands

- Proper functioning condition assessments will be conducted in riparian and wetland areas.
- Aquatic AIM data (MacKinnon et al. 2011) will be conducted.
- Rangeland Health Assessments will be conducted to determine if riparian and wetland areas are meeting Standard 2 (i.e., are they in properly functioning condition; are stream channel morphology and functions appropriate to soil type, climate, and landform).
- Long-term MIM study sites will be established, and monitoring will be conducted every 3 to 5 years, as time and funding allow.

1.14 Livestock Grazing/Rangeland Management

- To determine long-term trends in vegetation, BLM and USFS monitoring protocols (e.g., nested plot frequency or upland trend monitoring, respectively) and/or AIM core methods (MacKinnon et al. 2011) will serve as baseline monitoring methods.
- Monitoring associated with livestock management will be prioritized by resource issue and the need to complete a land health assessment and/or permit renewal, as time and funding allow.
- AIM core methods (MacKinnon et al. 2011) may be collected at additional points according to an intensified design or at targeted sites when overarching AIM sites are not sufficient for local data needs.
- AIM points will be chosen by a stratified random design to meet local data needs.
- Allotment monitoring will be prioritized by designated Improve, Custodial, and Maintain (ICM) categories, land health assessments, permit renewals, and existing data and completed as time and funding allows.

- To determine short-term utilization of the proportion or degree of the current year's forage production that is consumed or removed by animals, the Key Species Method (BLM 1999) will be used.
- Utilization monitoring will be conducted at each allotment within the Planning Area, as funding and staff time allow.
- Compliance inspections on allotments will be periodically conducted. Frequency of compliance checks will be determined primarily on past noncompliance, climatic conditions, designated ICM category, and/or allotment prioritization.

1.15 Recreation and Travel Management

- Campsite monitoring, traffic counter data collection, visitor use surveys, and the sign inventory will be conducted, as time and funding allow.
- Visitor and site data collected for recreational sites will be entered into RMIS for the BLM and INFRA for the USFS.
- Information collected at visitor facilities will be entered into the Facilities Assessment Management System, Inventory and Deferred Maintenance Report.
- Social trail monitoring will be targeted for every 5 years, as time and funding allow.
- A baseline route inventory will be completed as part of the Travel Management Plan (TMP) process. Once vetted, this baseline will serve as the basis for comparison to determine future social or unauthorized use.
- A percentage of road condition surveys will be performed annually and inputted into the USFS database.
- Road maintenance will be performed on main access roads to the BENM site, as time and funding allow.

1.16 Wilderness Study Areas

- WSAs are required to be monitored monthly (BLM Manual 6330), unless an alternative monitoring strategy is adopted.

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APPENDIX N

Socioeconomics Analysis



1 SOCIAL AND ECONOMIC EFFECTS ANALYSIS

This appendix provides supplemental information regarding the assessment of the social and economic effects of the Bureau of Land Management (BLM) and U.S. Forest Service (USFS) management alternatives for the proposed Bears Ears National Monument (BENM, or Monument).

1.1 Assumptions

A socioeconomic baseline report was prepared for the *Bears Ears National Monument: Monument Management Plans and Environmental Impact Statement, Shash Jáa and Indian Creek Units, Analysis of the Management Situation* (hereafter referred to as the AMS) (BLM 2018), and was included as Appendix C of that document. Appendix C of the AMS defines the analysis area for the social and economic effects analysis as San Juan County, Utah. The analysis area is economically tied to other counties in the surrounding area, including portions of both southeastern Utah and southwestern Colorado, so additional economic and social effects could occur in those areas. However, given the scale of the social and economic effects estimated within the San Juan County analysis area described in this appendix, it is not likely that spillover effects into surrounding counties would be substantial relative to the scale of their existing economic and demographic characteristics.

Based on comments received during public scoping and the effects analyses for other resources, the primary social and economic concerns regarding the management alternatives are related to recreation use and cultural resources.

1.2 Methods of Analysis

Recreation-related economic effects were estimated quantitatively; social and economic effects related to cultural resources were evaluated qualitatively.

Direct and indirect economic effects of the management alternatives from changes in recreation visitation were estimated using the IMPLAN model (MIG, Inc. 2016). The IMPLAN model was originally developed by the U.S. Forest Service and is commonly used by the BLM and many other government and private sector organizations to estimate the total economic impacts of various activities, actions, and policies. The model tracks inter-industry and consumer spending in a local or regional economy, allowing estimation of indirect and induced economic impacts within the economy that result from the original economic activity or change associated with the management alternatives. Indirect impacts refer to the secondary economic impacts that result from the re-spending of labor income within the local or regional economy, or purchases from other local businesses by directly affected sectors.

The social and economic effects analysis used 2016 IMPLAN data for San Juan County, the most recent data available at the time of the analysis. Direct effects inputs to the model included average daily visitor expenditure profiles provided by the BLM (in 2016 dollars). The BLM provided the daily visitor expenditure profiles specifically for this analysis. Economic effects results in this Environmental Impact Statement (EIS) are reported in 2018 dollars, using the IMPLAN gross domestic product deflator.

Consistent with the approach taken in the *Moab Master Leasing Plan and Proposed Resource Management Plan Amendments/Final Environmental Impact Statement for the Moab and Monticello Field Offices (Moab Master Leasing Plan EIS) (BLM 2016)*, quantitative economic effects from changes in recreation activity are reported in terms of projected average jobs and the projected net present value of cumulative dollar-denominated economic metrics (such as labor income, value added, and economic output) over the 15-year period following implementation of the management alternative. For purposes of discounting future dollar-denominated metrics to their present value, the study team used a 0.2% real discount rate. While this discount rate is unusually low by historical standards, it is the current recommended real discount rate for a 20-year future period based on OMB Circular A-94, Appendix C (November 2017).

Fiscal effects (changes in local, State, and Federal tax revenues associated with the management alternatives) were also estimated using the results from the IMPLAN modeling of recreation-related economic effects.

1.3 Economic and Fiscal Effects

Current economic and fiscal conditions in the social and economic analysis area were described in Appendix C of the AMS. The following information describes projected changes in those conditions resulting from the management alternatives. Alternative A is the No Action Alternative. Alternatives B, C, and D reflect differing management strategies to protect the objects and values of the BENM.

1.3.1 Recreation-Related Effects

Currently, BLM data suggest approximately 225,000 people visit the areas which have been designated as BENM on an annual basis, including an estimated 187,511 visits to the Indian Creek Unit and an estimated 36,994 visits to the Shash Jáa Unit (Appendix C of the AMS). The largest proportion of these visitors (37%) camp in the area, while an estimated 30% camp outside the area, 22% stay in motels outside the area, 4% are day visitors from outside the area, and 7% are visitors who reside locally within the analysis area (BLM expenditure profile data for the area). For purposes of the economic effects analysis, it is useful to convert these visits into visitor days, since visitors who stay overnight spend more than 1 day in the area while day visitors may spend only a portion of the day in the area. Current visitation to the two Units is estimated at 151,736 visitor days.

Different types of visitors also spend money differently in the analysis area. The BLM estimates that the average expenditures per visitor day range from \$12.83 for local day visitors to \$90.96 for visitors who stay in motels in the analysis area (BLM expenditure profile data for the area). For purposes of this analysis, the study team used the average daily expenditures for visitors of all types, weighted by their proportion of total visitor days (\$42.27 in 2016 dollars).

Based on current visitation by type of visitor and the estimated local daily expenditures of each visitor type, recreation visits to the two Units currently support about \$4.8 million in annual output (sales), \$2.2 million in annual labor income, and 65 jobs in the analysis area (MIG, Inc. 2016).

1.3.1.1 FUTURE VISITATION

To estimate the potential visitation impacts of managing the BENM, post-designation changes in visitation at five recently designated National Monuments were examined: Canyons of the Ancients, Carrizo Plain, Kasha-Katuwe Tent Rocks, Sonoran Desert, and Upper Missouri River Breaks. The BLM manages each of these Monuments located in the American West, all of which were

designated between June 2000 and January 2001. These Monuments were selected based on their location, year of designation, management under the BLM, and availability of visitor data. Most importantly, both pre-designation and post-designation visitation data were available for every site.

Evidence from previous Monument designations suggests that managing public land as a National Monument raises the profile of the area to potential visitors and increases visitation and visitor spending in the region (BBC 2016). The post-designation visitor growth rate analysis focused on the first 6 years after designation, after which time the effects of Monument designation on growth in visitation appear to taper off and are difficult to parse from other effects. The growth rates for each of the five Monuments during the first 6 years following their designation and determined the median annual cumulative growth rate in post-designation visitation was 15.5% (BBC 2016). This annual growth rate was used in this effects analysis to represent the high-growth scenario for visitation to BENM under all alternatives. Given the differing post-designation growth experience among the five Monuments examined by the study team, a medium-growth scenario was also developed. To establish the medium-growth scenario, visitation data for all five Monuments was aggregated for each year, which weights the Monuments relative to size and visitation numbers and mitigates some of the extreme visitor variation seen at smaller Monuments. Aggregate growth across all five Monuments occurred at cumulative annual growth rate of 7.1%.

A low growth scenario was estimated assuming that visitation in the BENM would continue to grow at rates similar to the growth observed prior to designation, which is approximately 3.1% per year (Section 4.12 of the Moab Master Leasing Plan EIS [BLM 2016]).

In both the high- and medium-growth scenarios, the study team assumed that after 6 years post-designation, annual visitation growth rates would return to the baseline annual BLM visitation growth rate of 3.1% projected in the Moab Master Leasing Plan EIS (BLM 2016).

Table 1 shows projected future visitation under the three growth scenarios. Over the 20-year analysis period, the annual number of visitor days is projected to increase from approximately 152,000 at present to approximately 240,000 under the low growth scenario, 301,000 (medium scenario), and 475,000 (high scenario). While there would be some differences in recreation management under the action alternatives (see Recreation-Related Effects, Section 1.3.1), the study team believes the primary effects on visitation would result from the higher profile associated with managing the area as a National Monument, together with possible improvements to recreation-related infrastructure. Insufficient information is available to estimate any differences in future visitation between Alternatives A, B, C, and D.

Table 1. Projected Future Recreation Visitation

Projected Annual Recreation Visitor Days									
Time Frame	Low Growth (continue at 3.1%)			Medium Growth (first 6 years at 7.1%)			High Growth (first 6 years at 15.5%)		
	Indian Creek	Shash Jáa	Total	Indian Creek	Shash Jáa	Total	Indian Creek	Shash Jáa	Total
Current	115,593	36,143	151,736	115,593	36,143	151,736	115,593	36,143	151,736
Year 1	119,176	37,263	156,440	123,790	38,706	162,496	133,561	41,761	175,322
Year 2	122,871	38,419	161,289	132,568	41,451	174,018	154,323	48,253	202,575
Year 3	126,680	39,610	166,289	141,968	44,390	186,358	178,311	55,753	234,064
Year 4	130,607	40,837	171,444	152,035	47,538	199,573	206,029	64,420	270,448
Year 5	134,656	42,103	176,759	162,816	50,908	213,725	238,054	74,434	312,488

Projected Annual Recreation Visitor Days

Time Frame	Low Growth (continue at 3.1%)			Medium Growth (first 6 years at 7.1%)			High Growth (first 6 years at 15.5%)		
	Indian Creek	Shash Jáa	Total	Indian Creek	Shash Jáa	Total	Indian Creek	Shash Jáa	Total
Year 6	138,830	43,409	182,239	174,361	54,518	228,880	275,059	86,004	361,063
Year 7	143,134	44,754	187,888	179,767	56,208	235,975	283,585	88,670	372,255
Year 8	147,571	46,142	193,713	185,339	57,951	243,290	292,377	91,419	383,795
Year 9	152,146	47,572	199,718	191,085	59,747	250,832	301,440	94,253	395,693
Year 10	156,862	49,047	205,909	197,009	61,600	258,608	310,785	97,175	407,960
Year 11	161,725	50,567	212,292	203,116	63,509	266,625	320,419	100,187	420,606
Year 12	166,738	52,135	218,873	209,412	65,478	274,890	330,352	103,293	433,645
Year 13	171,907	53,751	225,658	215,904	67,508	283,412	340,593	106,495	447,088
Year 14	177,236	55,417	232,654	222,597	69,601	292,198	351,152	109,796	460,948
Year 15	182,731	57,135	239,866	229,498	71,758	301,256	362,037	113,200	475,237

1.3.1.2 RECREATION-RELATED ECONOMIC EFFECTS

Future changes in recreation visitation would lead to corresponding changes in the economic contribution from recreation within the analysis area. As shown in Table 2, with projected baseline growth in visitation under the low growth scenario, recreation activity in the Indian Creek and Shash Jáa Units is projected to support an annual average of 95 local jobs. The cumulative net present value of recreation-related labor income and economic output (sales) over the 15-year period under Alternative A are estimated at approximately \$47 million and \$111 million, respectively.

Under the medium and high growth scenarios, average annual recreation-related employment is projected to increase to between 119 and 178 jobs. These alternatives are also projected to increase the net present value of labor income over the 15-year analysis period to between \$57 million and \$85 million and the net present value of recreation-related output (sales) to between \$135 million and \$202 million.

Table 2. Projected Future Economic Effects Related to Recreation

Alternative/Effect	15-Year Average Employment/Present Value of Cumulative Dollars		
	Employment	Labor Income	Output
3.1% Annual Visitation Growth			
Direct effect	81	\$40,992,080	\$87,744,544
Indirect effect	6	\$2,521,461	\$8,563,439
Induced effect	8	\$3,218,206	\$14,549,360
Total effect	95	\$46,731,747	\$110,857,344

Alternative/Effect	15-Year Average Employment/Present Value of Cumulative Dollars		
	Employment	Labor Income	Output
7.1% Annual Visitation Growth First 6 Years			
Direct effect	101	\$49,939,449	\$106,896,605
Indirect effect	8	\$3,071,822	\$10,432,587
Induced effect	10	\$3,920,645	\$17,725,059
Total effect	119	\$56,931,917	\$135,054,251
15.5% Annual Visitation Growth First 6 Years			
Direct effect	151	\$74,789,637	\$160,089,036
Indirect effect	12	\$4,600,380	\$15,623,908
Induced effect	15	\$5,871,584	\$26,545,161
Total effect	178	\$85,261,601	\$202,258,105

1.3.1.3 RECREATION-RELATED FISCAL EFFECTS

Currently, economic activity directly and indirectly supported by recreation visits to the two Units produces an estimated \$360,000 in annual State and local tax revenues and an estimated \$468,000 in annual Federal tax revenue (MIG, Inc. 2016).

Under the low growth scenario, the cumulative net present value of State and local tax revenues produced by recreation visits to the two Units over the 15-year analysis period is projected to be approximately \$7.2 million. Under the medium or high growth scenario, the cumulative net present value of State and local tax revenues is projected to increase to between \$8.7 million and \$12.8 million.

Under the medium or high growth scenario, the cumulative net present value of Federal tax revenue produced by recreation visits to the two Units over the 15-year analysis period is projected to be approximately \$8.9 million. Under the medium or high growth scenario, the cumulative net present value of Federal tax revenue is projected to increase to between \$10.8 million and \$16.2 million.

1.4 Effects on Non-market Values

As described in Appendix C of the AMS, non-market values represent economic values associated with BLM and USFS activities that either do not have a market or do have a market but are difficult to quantify. Three of the many types of non-market values that are most relevant to this evaluation, and which may differ between the management alternatives, include the economic benefits to local communities from the amenity values provided by open space and scenic landscapes; the economic benefits to individuals, such as the unpriced value recreationists and visitors experience; and ecosystem service values, which refers to the ways that healthy ecosystems support, enable, or protect human activity.

As indicated above, the Presidential action of designating the BENM is expected to lead to increased visitation to the area. The aggregate economic benefit received by visitors (which is based on estimates of the consumer surplus associated with the activities they undertake during their visit and is distinct and separate from the trip expenditures discussed in Section 1.3.1.2)

would increase correspondingly with higher visitation. As shown in Table 5-13 in Appendix C of the AMS, the estimated economic benefits from recreation activities common to the two Units—such as camping, hiking, and rock climbing—ranges from about \$22 per visitor day to about \$66 per visitor day. With the action alternatives anticipated to lead to between 60,000 and 235,000 more visitors per year to the area by the end of the 15-year analysis period (see Table 1), the annual increase in the non-market benefits associated with recreation at the two Units would be several million dollars per year.

1.5 Social Effects

The EIS for the Moab Master Leasing Plan identified two major categories of social effects associated with BLM management of public lands in the area (BLM 2016). Social impacts driven by economic effects can result from substantial changes in employment and population related to public land management. Other social effects are more purely social and cultural in nature and often can be usefully evaluated by considering the generalized perspectives of different stakeholder groups.

The differing management strategies under the alternatives considered in this EIS are unlikely to lead to substantial social effects purely based on their economic effects. Simply put, the differences in recreation-related employment—even under the high scenario for future visitation growth—are small enough to have relatively little impact on the overall economy and social makeup of the analysis area. As described in Appendix C of the AMS, there are currently about 6,400 jobs in the analysis area (San Juan County). The action alternatives are projected to lead to no more than 85 additional recreation-related jobs over the next 15 years (on average), which would be less than a 2% increase in county employment.

Appendix C of the AMS identified and defined five categories of stakeholders for this EIS:

- Habitat and resource conservation stakeholders
- Recreation stakeholders
- Mineral development and production stakeholders
- Visual resource stakeholders
- Cultural resource Stakeholders

Habitat and resource conservation stakeholders are likely to find Alternative A, under which management of BENM would continue as outlined in the current Monticello RMP (BLM 2008), the least satisfactory. These stakeholders would prefer any of the proposed action alternatives but would likely prefer Alternative B, which would offer the most stringent protection of habitat and natural resources, and least prefer Alternative D, which could be seen as offering less assurance of future habitat and resource conservation.

Recreation stakeholders are generally likely to support any of the action alternatives that would lead to potential improvements in access and recreation infrastructure. There may be a subset of these stakeholders that will be concerned about the additional popularity this could create and the potential for more crowding. Among the action alternatives, stakeholders purely focused on recreation opportunities would likely prefer Alternative D, which offers the most unlimited recreation access and opportunity, and least prefer Alternative B, which is more restrictive in terms of recreation.

Mineral development and production stakeholders may find any of the alternatives unsatisfactory, as Proclamation 9558 withdrew all Federal lands within the BENM from location and entry under the Mining Law of 1872 and from the disposition of leasable and salable minerals under the Mineral Leasing Act of 1920 and all other applicable laws. Although there is little or no commercial development potential for mineral resources in the area, these stakeholders may be concerned about the precedent of applying additional management restrictions on Federal lands.

Visual resource stakeholders are likely to be affected by the alternatives in much the same way as habitat and resource conservation stakeholders.

Cultural resource stakeholders are also likely to share similar effects from the alternatives with habitat and resource conservation stakeholders and visual resource stakeholders. While cultural resource stakeholders will find the additional protection of cultural sites highly favorable, they may also be concerned about the likelihood for increased levels of visitation associated with the action alternatives.

1.6 Environmental Justice Impacts

Definitions and methods for the analysis of potential environmental justice (EJ) issues are described in Appendix C of the AMS. In short, the socioeconomic study area was screened to identify communities with minority and low-income populations that qualify as potential EJ populations based on guidance for EJ analysis from the Council on Environmental Quality. The EJ screening analysis identified six Census Designated Places (CDPs) on the Navajo Reservation, two CDPs located off the reservation, and the City of Blanding for further screening based on their large proportions of minority residents (American Indians). The analysis also identified the Navajo Nation as a whole (as an American Indian Reservation) and San Juan County as a whole (based on its high proportion of American Indian residents) for further screening.

EJ impacts would occur if any of the areas described above were to experience disproportionately high and adverse public health or environmental impacts from any of the management alternatives. Adverse impacts to cultural resources would also likely represent an EJ impact. However, none of the proposed action alternatives is anticipated to result in any adverse public health or environmental impacts. Each of the action alternatives is likely to be more protective from a health and environmental standpoint than the continuation of current management under Alternative A.

2 LITERATURE CITED

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