NATIONAL PARK SERVICE • U.S. DEPARTMENT OF THE INTERIOR

RESOURCE STEWARDSHIP STRATEGY SUMMARY

CAPITOL REEF NATIONAL PARK

UTAH

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PURPOSE OF A RESOURCE STEWARDSHIP STRATEGY

A resource stewardship strategy (RSS) is a strategic plan intended to help park managers achieve and maintain desired resource conditions over time (see NPS *Management Policies 2006* [§2.3.2]). As part of a park's planning portfolio, a resource stewardship strategy serves as a bridge between the park's foundation document, other plans, and everyday management of its natural and cultural resources.

More specifically, a resource stewardship strategy is a dynamic planning tool used to set stewardship goals and track progress in achieving and maintaining desired natural and cultural resource conditions. All resource stewardship goals and activities should be based on science, law, NPS management policies, and the long-term public interest.

Essentially, a resource stewardship strategy establishes a framework and a coordinated process for

1. evaluating and summarizing existing information about priority park resources (including key issues, stressors, and threats),
2. using science, scholarship, and traditional knowledge to establish stewardship goals for priority resources,
3. integrating natural and cultural resource management to achieve stewardship goals, and
4. determining what stewardship activities are needed to get us "from where we are to where we want to be."

This information provides a basis for making informed resource management decisions for specific project proposals and for developing and revising annual work plans over time.

A resource stewardship strategy is not a static document or one-time effort. Rather, it is a dynamic framework that should be updated as needed as conditions change; new issues, stressors, or threats are identified; and activities are accomplished. A resource stewardship strategy is reviewed by NPS subject-matter experts and decision makers; however, it is not a publicly reviewed decision document.

The RSS process also provides an opportunity for a park to take an integrated approach to resource management by capitalizing on overlapping opportunities among and within disciplines, identifying stewardship activities that benefit multiple resources, or addressing larger parkwide issues. Taking an integrated approach can result in more effective stewardship for resources through the use of science, scholarship, research, policy, interpretation, and direct management.

INTENT OF THIS SUMMARY DOCUMENT

This summary document is intended to provide readers with a snapshot of the resource stewardship strategy for Capitol Reef National Park. For the sake of simplification and abbreviation, this unit of the national park system will also be referred to as "the park" or CARE in this document. The document serves as a communication tool that complements the evolving RSS desktop application that is updated to reflect the progress and changing needs of resource stewardship over time. This summary is not intended to describe all of the elements in the resource stewardship strategy; instead, the summary focuses on those aspects of the strategy that are essential for communicating information about the park's plan to address management issues and seize opportunities for those resources identified as priority natural and cultural resources.

This document includes a summary of key issues, stressors, and threats affecting park resources; the park's priority resources and their components; stewardship goals for priority resources; and stewardship activities determined to be priorities for the next three to five years. The document concludes with a brief description of future RSS implementation.

Remember that implementation of the resource stewardship strategy is an ongoing process, with necessary updates and revisions occurring as resource and management conditions change and stewardship activities are carried out.

Photo Credit: Carl Berger

BRIEF DESCRIPTION OF CAPITOL REEF NATIONAL PARK

Capitol Reef National Park is located in south-central Utah within the Colorado Plateau. The spectacular geologic scenery and long cultural history of the area, along with ardent supporters, led President Franklin D. Roosevelt in 1937 to designate Capitol Reef National Monument. Congress established Capitol Reef National Park in December 1971. The park encompasses approximately 242,000 acres of rugged bedrock heights dissected by deep canyons, mesas, and buttes, and sparsely vegetated badlands. These striking features are unified by the nearly 100-mile-long monocline (wrinkle in the earth's crust) called the Waterpocket Fold. The park's varied landscape is the result of 270 million years of geologic history and an abundance of colorful Mesozoic Era strata. The exposed geologic strata reflect the stories of changing ancient oceans, swamplands, riverine environments, desert climates, and volcanism.

The Waterpocket Fold is the classic definition of a monocline, a geologic fold with steeply inclined layers that create a warp, or step, in otherwise relatively horizontal layers of rock strata. The exposed Waterpocket Fold in Capitol Reef National Park is one of the largest monoclines in North America and results from movement along faults deep in the Earth's crust. Geologic layers on the west side of the fold were lifted more than 7,000 feet higher than the respective layers on the east. The fold formed between 70 and 35 million years ago as part of a major mountain-building event in North America known as the Laramide Orogeny. Within the last 20 to 5 million years, continued uplift of the Colorado Plateau, combined with erosion, exposed this fold to the surface. The Waterpocket Fold was named for the many water-holding basins created in the exposed bedrock of the fold. The high rugged cliffs of the Waterpocket Fold appeared to early explorers and pioneers as a difficult barrier to cross, likened to a reef at sea, and this reef-like barrier helped give the park its name.

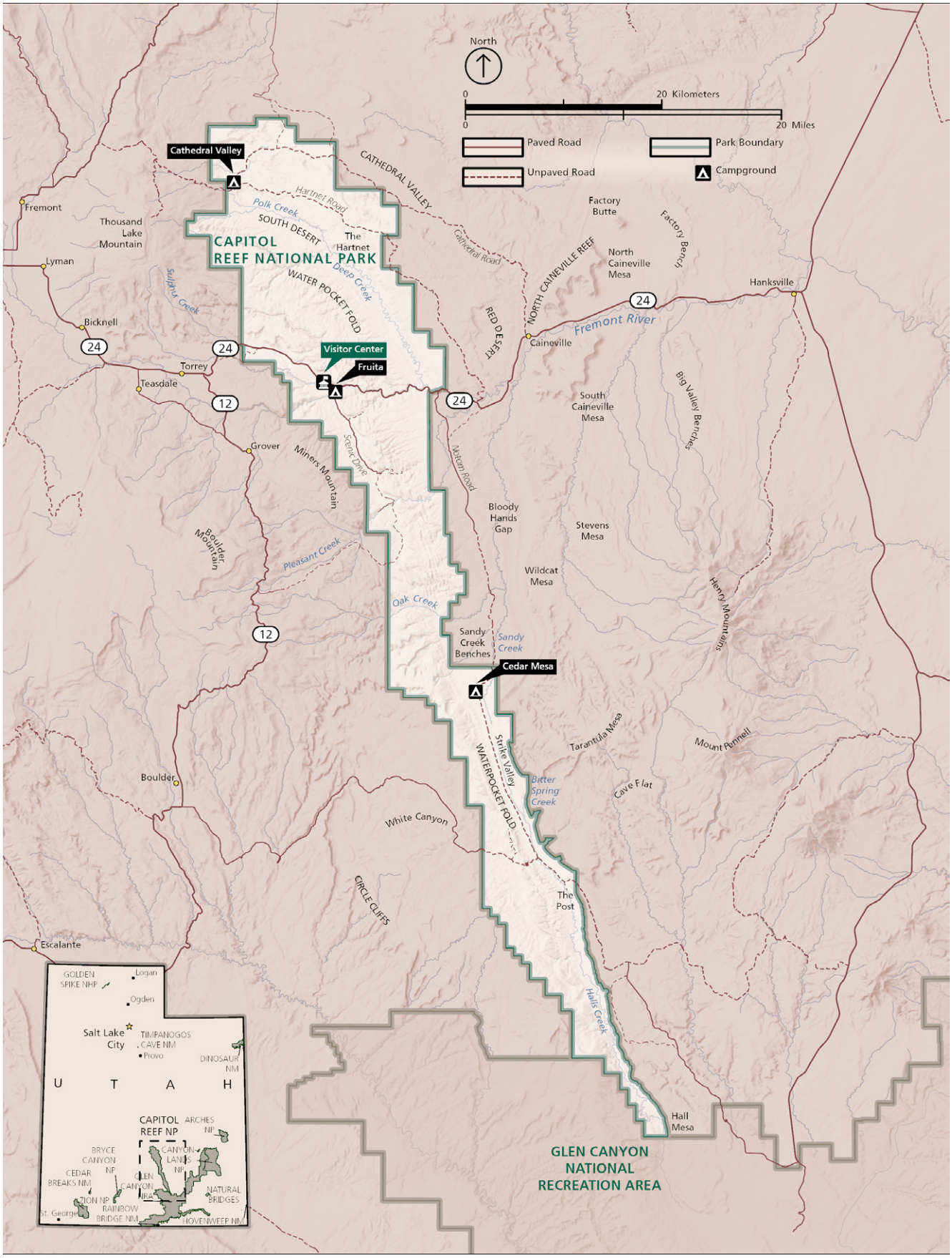
The southern section of the park, known as the Waterpocket District, provides superb opportunities to view and explore the Waterpocket Fold. Traveling the Burr Trail and Notom-Bullfrog Roads, visitors pass mile after mile of spectacular cliff faces, amphitheaters, strike valleys, narrow canyons such as Upper and Lower Muley Twist, and other geologic wonders.

Visitors who venture to the remote northern sections of the park, called the Cathedral District, are rewarded with spectacular vistas, and views of massive solitary sandstone monoliths standing in stark contrast over the vast desert landscape. The Temple of the Sun and Temple of the Moon monoliths are emblematic of the park.

The most visited areas of the park and most easily accessed, the Fruita Rural Historic District and nearby areas, were occupied long before the arrival of Europeans. During the Archaic and Formative periods, people traveled through and lived in Capitol Reef, including the Fremont River valley and nearby stream valleys. Modern archeologists call the American Indians of the Formative period the Fremont Culture, based on work conducted along the Fremont River. These relatives of Ancestral Puebloans migrated out of the area around AD 1300, leaving behind petroglyphs and pictographs on rocks and canyon walls to mark their passage. In the early 1600s to 1800s, Paiute Indians lived and thrived in the area. Early explorers, pioneers of The Church of Jesus Christ of Latter-day Saints ("Latter-day Saints"), and others came to the area in the late 1800s and named Chimney Rock, Hickman Bridge (a natural arch spanning 133 feet and 125 feet tall), Capitol Dome (a large sandstone feature that also contributed to the park's name), and other features throughout the park. The historic Latter-day Saints farming community of Fruita was occupied and actively farmed from the 1880s through the 1950s. Most private lands in Fruita were purchased in the 1960s, and by the time Capitol Reef was designated a national park in December 1971, little private land remained in Fruita. Substantial remnants of the extensive pioneer orchards are still managed by the park, and many of the historic buildings remain.

The gateway town of Torrey, 11 miles west of Capitol Reef National Park Visitor Center on Utah State Route 24, offers lodging, restaurants, and other services, and easy access to the scenic wonders inside the park. Other neighboring communities near the park, including Teasdale, Bicknell, Lyman, and Loa west of the park and Hanksville east of the park, make great staging areas for exploration of Capitol Reef National Park and the surrounding area.

Figure 1. Capitol Reef National Park Map



DEVELOPMENT OF THE RESOURCE STEWARDSHIP STRATEGY FOR CAPITOL REEF NATIONAL PARK

This resource stewardship strategy represents the collaborative efforts of National Park Service (NPS) personnel from the park; the NPS Regional Office for Interior Regions 6, 7, and 8, the NPS Cultural Resources, Partnerships, and Science Directorate; the NPS Natural Resource Stewardship and Science Directorate; and the NPS Denver Service Center – Planning Division. A resource stewardship strategy is based on information about park resources that was available at the time of RSS development and on the experience and professional judgment of resource specialists.

In developing the resource stewardship strategy, the project team followed a five-step process established by an NPS working group that formed to provide direction and oversight for RSS efforts nationwide. First, the team gathered and evaluated existing information about park resources to determine the current condition of resources and status of information. Next, the team identified and assessed key issues, stressors, and threats that are impacting park resources or could do so in the future. The team then identified priority resources and their components for this resource stewardship strategy. The team subsequently set stewardship goals for each priority resource. Finally, the team identified stewardship activities aimed at achieving those goals and prioritized activities to implement within the next three to five years. The organization of this summary document parallels this RSS development process, which is described in more detail in internal NPS documents, including the 2022 *RSS Development Guide*. Some key terms that are used throughout this summary document are defined below.

DEFINITIONS OF KEY TERMS

Priority Resource: A cultural or natural resource or value that the National Park Service manages or monitors to maintain a park unit's purpose and significance, to address policy/law mandates, or to address scholarly and scientific research needs or findings.

Priority Resource Component: An aspect or attributing resource that is integral to the functionality, importance, or condition of a priority resource and can be managed or monitored practically over the next five-year horizon. A priority resource component is included, or nested, under the associated priority resources.

Stewardship Activity: One or more initiatives that lead to the achievement of a short-term stewardship goal. On its own, a stewardship activity should produce a specific deliverable or outcome. Activities may include assessments, documentation, identification, maintenance, operations, resource protection, thematic studies, cataloging, evaluation, interpretation, planning, training, data recovery, education, inventory, monitoring, research, survey, treatment, restoration, or other types of management.

Stewardship Goal: A description of the resource condition or information that managers are working to achieve for a particular priority resource or component. Stewardship goals guide the National Park Service in its aim to enhance information; improve or maintain resource conditions; address issues, stressors, or threats; or achieve other park stewardship needs related to the priority resource, such as increasing collaboration with partners or expanding education, interpretation, and other programming.

Strategy: A tactical path forward defined through achievable actions that maintain or improve aspects of a priority resource/component. Strategies start with a stewardship goal and include a comprehensive set of activities to achieve that goal. Strategies are logically organized, science/scholarship-based, well documented, and reviewed by subject-matter experts. The typical time frame for executing a strategy is short term—typically three to five years, depending on a park's needs.

KEY PARK ISSUES, STRESSORS, AND THREATS

Capitol Reef National Park faces a variety of key issues, stressors, and threats that affect park resources or may potentially affect park resources in the future (table 1). Key issues are management concerns that directly relate to park resources and their conditions. Stressors are factors that exacerbate change in resource conditions. Threats are impending or potential factors that would negatively impact park resources in the future, though park resources are not currently affected.

Given the significance of climate change stressors on resources at the park, a brief narrative that elaborates on climate change effects and responses is provided after the table.

Table 1. Key Issues, Stressors, and Threats; Potential Implications; and Affected Resources

KEY ISSUE, STRESSOR, OR THREAT[1]	POTENTIAL IMPLICATIONS	RESOURCE TYPES AFFECTED
CLIMATE CHANGE — Temperature Increase	Increased temperatures change the ranges of plants and animals and multiplies the threat of further expansion of invasive, nonnative plant range. Community composition, vegetation structure, and species richness/biodiversity of the park's plant and animal communities are particularly at risk from increased temperatures. Rising temperatures also change phenology and natural cycles, causing trophic mismatches. Increased temperatures accelerate the deterioration of exposed archeological sites and artifacts, historic structures, and constructed historical landscape features; potentially impact culturally significant plant and animal species; stress HVAC systems in curation facilities; and may increase demand for HVAC installation/upgrade on historic structures in adaptive reuse. Spring is arriving earlier in the year, but the date of the last frost remains static; historic fruit trees therefore start blossoming earlier and fruit blossoms and crops are destroyed by frost. Increased temperatures would also continue to alter surface and groundwater conditions, which has indirect effects on riparian vegetation, habitat, and wildlife species. Warmer temperatures will continue to increase atmospheric evaporative demand, which will increase landscape aridity even if precipitation remains constant or slightly increases. Warmer temperatures would also lead to less precipitation falling as snow and more precipitation falling as rain, changing the timing of spring runoff as well as the quantity of flows throughout the year. Warmer temperatures will change the ability to do operations outside, such as fieldwork, affecting resource management.	- Cultural landscapes and historic districts - Ethnographic resources, including historic orchards - Historic structures - Archeological resources - Museum resources - Wildlife - Vegetation - Water resources - Soils

Table 1. Key Issues, Stressors, and Threats; Potential Implications; and Affected Resources (continued)

KEY ISSUE, STRESSOR, OR THREAT[1]	POTENTIAL IMPLICATIONS	RESOURCE TYPES AFFECTED
HEAVY RAINFALL, FLOODING, AND EROSION	Flooding, erosion, and sedimentation are natural processes at the park and contribute to the health of park ecosystems. Floodwaters may carry nutrient-rich sediments which contribute to a fertile environment for vegetation. Seasonal variability and variable sediment and flow regimes also help maintain ecological biodiversity in aquatic and riparian ecosystems. At the same time, flooding, erosion and sedimentation may contribute to the loss of integrity of cultural resources and other resources, even when these events are occurring within their historic range of variability. For example, sheet-washing events and bank collapse may negatively impact orchards and a variety of other cultural resource types as well as roads, trails, and other landscape features that may or may not be historic. Incision by streams and washes is currently occurring in the park, although it is unclear whether these are occurring at a rate which is within the natural range of variation or being exacerbated by extreme weather events. In some cases, large high-intensity rain events result in a smaller portion of rainfall soaking into the ground, and therefore less water is available to plants. However, larger low-intensity rain events may alternatively result in more infiltration and soil water storage relative to the same amount delivered in small doses that may evaporate between events. Climate change is likely to exacerbate changes to resource conditions caused by flooding, erosion, and sedimentation. Precipitation in the southwestern United States is more likely to occur during higher-intensity one- or two-day events. Engineered structures (roads, drainage structures) are designed to withstand a certain level of severe weather events, but not all park structures are capable of withstanding the events that park is experiencing in the present and may experience in the future. When structures fail, this causes additional impacts on natural and cultural resources downstream. Severe weather events may involve high winds; big downdrafts may blow down tree limbs, affecting the historical orchards as well as native plants. Severe wind also increases the amount of blowing sand and thus intensifies wind-driven erosion of cultural and natural resources. Extreme precipitation events could also increase the frequency of rockfall and other geologic hazards; rockfall may cause damage to historic trail corridors and road corridors. Severe flooding or sedimentation affects resource management by closing roads and/or making them more difficult to maintain and therefore limiting access to areas of the park. In addition, management responses to severe weather events (such as the flooding that occurred in June 2022) may also result in adverse impacts on natural and cultural resources. Responses to these events may divert staff and funding away from other resource management responsibilities.	- Cultural landscapes and historic districts - Historic structures - Archeological resources - Ethnographic resources - Wildlife - Vegetation - Water resources - Soils - Geologic resources

Table 1. Key Issues, Stressors, and Threats; Potential Implications; and Affected Resources (continued)

KEY ISSUE, STRESSOR, OR THREAT[1]	POTENTIAL IMPLICATIONS	RESOURCE TYPES AFFECTED
DROUGHT	Plant and animal community composition, vegetation structure, and species richness/biodiversity are at risk from increased drought frequency and severity, as well as associated changes to humidity. Reduced native vegetation would result in decreased food sources for native wildlife. Loss of vegetation groundcover would also increase wind-driven erosion, leading to impacts on cultural resources from wind-driven debris. Increased dust in the area would also negatively impact air quality, views, and night skies. Restoration of disturbed areas might become harder, as it is unclear to what extent native species can/will adapt to changing environmental conditions and invasive species may become established or spread more easily under future climate conditions. The park may be unable to restore to resilient ecosystem states, leading to uncertainty about the desired outcomes of restoration. Wildlife would also be impacted by drought as some water tanks may be dry and normal water sources may no longer be available. Drought is significant for orchard resources, as it decreases the availability of water for irrigation as well as available water from precipitation and causes fruit and tree damage. Fremont River and other streams (hydrology) and their riparian vegetation and wildlife are quite susceptible to drought and altered precipitation. Higher climatic water deficits contribute to reduced soil moisture and changes to soil fertility. Soil instability could compromise the integrity of archeological resources and historic structures.	- Cultural landscapes and historic districts - Historic structures - Archeological resources - Ethnographic resources - Vegetation - Wildlife - Water resources - Soils - Geologic resources - Air quality - Views - Night skies
NONNATIVE/INVASIVE PLANT SPECIES	Invasive plant species threaten the ecological structure, function, composition, and diversity of native communities; displace native species; alter water availability, nutrient cycles, and disturbance regimes; change fire frequency, timing, and intensity, and degrade cultural landscapes. Invasive plant species directly impact wildlife by reducing available native vegetation available as food. Invasive plant establishment and spread also contribute to a loss of native seed banks. With a changing climate, and increasing establishment/spread of invasive plants, park staff are challenged to restore disturbed areas; some ecosystems may reach a tipping point or threshold where they shift into an alternate state.	- Cultural landscapes and historic districts - Historic structures - Archeological resources - Ethnographic resources - Wildlife - Vegetation - Water resources - Soils
NONNATIVE/INVASIVE ANIMAL SPECIES	Some non-native/invasive animal species have become established throughout the park. These animals compete with native species and threaten ecosystem health. As species ranges shift due to climate change, new species may enter the park, with unknown consequences for native plant and animal communities.	- Vegetation - Wildlife

Table 1. Key Issues, Stressors, and Threats; Potential Implications; and Affected Resources (continued)

KEY ISSUE, STRESSOR, OR THREAT[1]	POTENTIAL IMPLICATIONS	RESOURCE TYPES AFFECTED
RESIDENTIAL, COMMERCIAL, AND ENERGY DEVELOPMENT OUTSIDE THE PARK	Residential and commercial development may fragment habitat and wildlife movement patterns, introduce artificial light and noise, lower groundwater tables and reduce streamflow coming into the park, introduce invasive plants, and degrade air quality. Wildlife communities could shift from diverse array of specialists to primarily generalists that may have different trophic relationships and/or to species that are more tolerant of anthropogenic noise and light. Flare stacks from potential oil and gas development may contribute to mortality of raptors. Development also disrupts scenic views as well as historical views from the park's historic district. Increased vehicle traffic may lead to an increase in wildlife-vehicle collisions, affecting park wildlife populations, and could lead to an increase in noise from vehicles traveling in and nearby the park.	- Cultural landscapes and historic districts - Historic structures - Archeological resources - Ethnographic resources - Wildlife - Vegetation - Water resources - Soils - Air quality - Views - Sounds - Night skies
UPSTREAM FARMING AND RANCHING	Grazing that occurs upstream from the park contributes to the presence of E. coli in park streams, degrading water quality and aquatic habitat. Upstream water withdrawals to support farming and ranching may result in lower water flows and reduced water quality. Cattle may trespass into the park, impacting park resources (see next row/topic). Invasive plants may also be introduced via waterways flowing out of farming and ranching areas, trespass cattle, and cattle being transported through the park via the highway.	- Water resources - Vegetation - Wildlife
LEGISLATED LIVESTOCK GRAZING AND TRAILING IN PARK	Current managed levels of livestock grazing and trailing within the park may result in disturbances to biological soil crusts, altered community composition of native vegetation or cause the introduction and/or proliferation of non-native plants. Livestock use may also disturb archeological resources. Distinguishing disturbances caused by recent activities from past disturbances caused by more intensive historic trailing and grazing use prior to NPS acquisition remains a management challenge.	- Vegetation - Soils - Water resources - Wildlife - Federally listed species - Riparian ecosystems - Archeological resources - Cultural landscapes
DISEASE	Environmental and anthropogenic factors introduce or promote pathogens, which pose human and wildlife health risks, increase plant and wildlife mortality, displace or extirpate wildlife species, and alter plant communities and habitat. Environmental factors and increased visitation may stress wildlife and make them more susceptible to disease, particularly bighorn sheep. Pathogens also impact the park's historical orchards. Environmental stress (e.g., droughts), as well as soil compaction and visitor trampling of roots, may make the orchards more susceptible to disease. Environmental changes or introductions of pests may allow new pests to survive/thrive where they have not in the past.	- Wildlife - Vegetation - Ethnographic resources - Historic landscapes

Table 1. Key Issues, Stressors, and Threats; Potential Implications; and Affected Resources (continued)

KEY ISSUE, STRESSOR, OR THREAT[1]	POTENTIAL IMPLICATIONS	RESOURCE TYPES AFFECTED
ALTERED HYDROLOGY	The 1962 re-route of the Fremont River as part of Utah State Route 24 construction has resulted in bedrock incision and potential threats to the stability of existing infrastructure and riparian resources throughout the corridor. The Fremont River re-route likely inhibited fish movement and caused the extirpation of native roundtail chub in the park. The river is much more channelized today. Structures and water diversions have altered hydrology in other watersheds such as Oak Creek and Pleasant Creek. The threat of loss or degradation of water, including groundwater, due to developments (e.g., upstream water withdrawals) substantially impacts resources throughout the park. Reduced flows in the Fremont River and other creeks affect aquatic and riparian flora and fauna as well as many other animal species. For example, shallower, warmer water may limit the native species that persist long-term due to thermal tolerance ranges of species. Lower flow rates due to irrigation withdrawals may also exacerbate E. coli loading caused by livestock grazing near water sources upstream of the park and failed septic systems in the same area.	- Water resources - Vegetation - Wildlife - Ethnographic resources
WATER RIGHTS	Maintenance of healthy riparian plant and wildlife communities (e.g., fish, macroinvertebrates, birds) depends on preserving the in-stream water supply in CARE's streams. CARE maintains state appropriative water rights and federal reserved water rights. While the federal water rights have not been quantified, state water rights require the use of the allocation or the park risks losing these rights.	- Water resources - Vegetation - Wildlife - Ethnographic resources
VANDALISM, GRAFFITI, AND OTHER RESOURCE VIOLATIONS	Vandalism and graffiti degrade the condition of cultural resources and lead the park to expend resources towards mitigation. Illegal excavations cause resource degradation and may result in the direct loss of resources. Poaching (e.g., of rare plants species) causes direct loss of individuals and may lead to population decline. Excessive group sizes on trails/routes (permit violation) may disturb areas of the park that would normally be getting a rest period from visitor impacts. Visitors illegally accessing closed areas (closure violations) may disturb sensitive resources, such as cultural resources and breeding wildlife (e.g., Mexican spotted owl). Off-road driving may cause increased erosion, disturbance of wildlife species, crushing of vegetation and biological soil crusts, promotion of invasive species, and degradation of cultural resources.	- Historic structures - Archeological resources - Ethnographic resources - Cultural landscapes - Vegetation - Wildlife

Table 1. Key Issues, Stressors, and Threats; Potential Implications; and Affected Resources (continued)

KEY ISSUE, STRESSOR, OR THREAT[1]	POTENTIAL IMPLICATIONS	RESOURCE TYPES AFFECTED
HIGH-INTENSITY AUTHORIZED VISITOR USE—Hiking, Canyoneering, Backpacking, and Climbing	Visitors hiking and camping, especially off-trail, may introduce non-native plant seeds, in addition to disturbing sensitive plant communities, particularly for biological soil crusts. Increased visitation has generally led to increased width of trails because more people are hiking on them, causing additional soil compaction and vegetation trampling. The presence of humans in habitats impacts species sensitive to sound disturbance and disruption of wildlife habitat, leading to reduced foraging efficiency, survival, and reproductive success, and increased susceptibility to diseases. Vehicle-wildlife collisions causes injury and/or mortality to wildlife species. Visitors impact aquatic ecosystems through swimming, hiking across streams, canyoneering through potholes/tanks, urinating and defecating too close to water sources, and illegal construction of dams to create swimming holes, which could inhibit fish movement and degrade habitat. Visitors also contribute to stream pollution by applying insect repellent and sunscreen before wading or swimming. Visitors encountering cultural resources, especially in high numbers, may accelerate deterioration of these resources. Off-trail visitors may trample sensitive archeological and/or ethnographically significant resources. Canyoneering may result in illegal gear, such as bolts, in canyons as well as the accumulation of legal gear, which may become trash over time, such as webbing and hardware (e.g., quick links and carabiners). Canyoneering may also cause damage to geological resources (e.g., rope grooving), and disturb/displace wildlife (e.g., nesting birds), especially in more remote areas. Inappropriate fruit harvesting from historic orchards, such as picking unripe fruit or climbing trees to access fruit, stresses those resources. High-intensity visitor use strains the capacity of the facilities division, potentially diverts resources away from resource management; also, some facilities issues (e.g., emptying vault toilets) may impact resources if maintenance cannot keep up with demand.	- Vegetation - Wildlife - Soils - Water resources - Archeological resources - Ethnographic resources - Cultural landscapes - Cultural resources in general
AIR POLLUTION	Without the effects of pollution, visual range is between 125 and 195 miles. However, scenic views are diminished by pollution-caused haze, reducing visibility to between 75 and 170 miles depending on pollution levels. At night, particulates scatter artificial light, increasing the impact of light pollution on night skies. Ground-level ozone reaches levels that may affect breathing for sensitive user groups and cause injury to 15 ozone-sensitive plants including aspen, willow, and serviceberry. Airborne contaminants, including mercury, can deposit and accumulate in organisms including insect, fish, bird, bat, amphibian, and reptile species leading to reduced foraging efficiency, survival, and reproductive success. Mercury concentrations detected in park dragonfly larvae and fish (speckled dace) suggest moderate to severe levels in park biota, although the degree of ecological impairment is unknown.	- Air quality - Views - Night skies - Native plants - Native wildlife - Water quality

Table 1. Key Issues, Stressors, and Threats; Potential Implications; and Affected Resources (continued)

KEY ISSUE, STRESSOR, OR THREAT[1]	POTENTIAL IMPLICATIONS	RESOURCE TYPES AFFECTED
WATER CONTAMINANTS	Water contaminants may degrade water quality, alter vegetation communities, degrade aquatic and riparian habitat quality, and impact wildlife. Historical orchards may also be impacted by water contaminants.	- Water resources - Vegetation - Wildlife - Soils - Ethnographic resources - Cultural landscapes
NOISE POLLUTION	Noise pollution may negatively impact natural and cultural soundscapes, degrade the setting of cultural landscapes, and impact wilderness character. Noise pollution may also have a negative influence on the ability of wildlife to function naturally on the landscape by causing avoidance behaviors and impacting their ability to avoid predators, hunt prey, perform courtship rituals, and effectively use their habitats. Plant communities may be adversely affected by noise pollution because key pollinators and seed dispersers will avoid certain areas; this may be especially important for managing the park's historic fruit orchards, whose blossoms depend on pollination for fruiting success. The park does not currently use outside pollinators in the orchards.	- Soundscapes - Wildlife - Vegetation - Cultural landscapes - Ethnographic resources - Wilderness character
LIGHT POLLUTION	Artificial light may negatively impact night skies, adversely affecting wildlife species that rely on natural patterns of light and dark that influence movement, feeding, mating, emergence, migration, hibernation, and dormancy. For example, bright light sources may attract migrating birds and lead to collisions with structures. Insects may be drawn in from great distances to even a single light, reducing population levels and altering food levels for other wildlife. Nocturnal taxa such as bats are especially likely to suffer from light pollution since they are adapted to forage in a dark environment. The misapplication of modern lighting technology, with inappropriate color, intensity, or fixtures, may threaten the value of historic resources.	- Night skies - Wildlife - Ethnographic resources - Historic districts - Cultural landscapes - Wilderness character
DATA GAPS	Without baseline data, it is difficult to understand and assess threats to cultural resources, and to respond. For example, it is difficult to know the full impact increased visitation is having on park resources without baseline inventory and monitoring data. It is also difficult to establish research agendas and management priorities without current data, including a current historical resource study (HRS) and archeological overview and assessment (AOA). In the absence of complete archeological survey, despite the breadth of existing research, it is difficult to identify general trends and predict site types and locations for park management purposes. Without reliable information on current and trending conditions for the park's natural resources, it is difficult to make timely and informed decisions. The park's natural resource condition assessment identified data gaps for many of the park's natural resources including soundscapes, seeps/springs/tinajas, riparian condition and trend, rare plants, Mexican spotted owl, and desert bighorn sheep.	- All cultural and natural resources

1. The order of the key issues, stressors, and threats listed in this table is arbitrary and does not indicate level of concern or severity.

CLIMATE CHANGE SUMMARY

Air temperatures in Capitol Reef National Park have already increased, and they continue to do so at a rapid rate. The average annual temperature increased by 1.3°F per century from 1900 to 1970, and since 1970, when effects of anthropogenic climate changes strengthened, the park warmed at the extremely rapid rate of 6.1°F per century. Total annual precipitation has not changed since 1900, but it has been highly variable. This variation—the difference from one year to the next—was significantly greater in the past two decades than previously.

The NPS Climate Change Response Program[1] (Runyon et al. in prep) produced two divergent and plausible climate futures specific to CARE for consideration during the RSS process: a "Warm Wet" and a "Hot Dry" climate future. All 40 climate models evaluated by the National Park Service project significant warming by 2040 (mean of 2025–2055) with annual mean temperature increases of 3.3°F and 5.3°F for the Warm Wet and Hot Dry climate futures. Annual precipitation is projected to increase by about 1.2 inches by 2040 for the Warm Wet climate future and remain the same as historical for the Hot Dry climate future.

Even with increasing precipitation, the overall trend for both climate futures is towards greater aridity because temperature-driven increases in evapotranspiration are equal to or greater than projected increases in precipitation. Both climate futures project years that are drier than any observed historically, as measured by climatic water deficit (a measure of plant-available

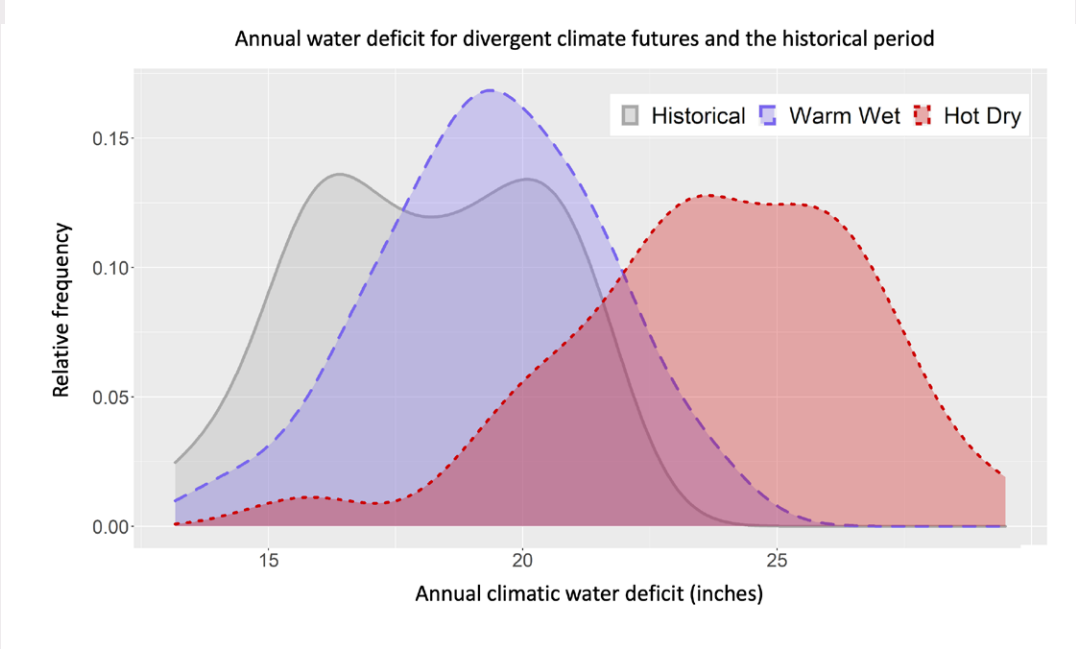


Figure 2. Historical and Projected Annual Climatic Water Deficit (inches of water) for Capitol Reef National Park

Note: Historical (gray line, 1979–2021) and projected (red and blue lines, 2040) frequency, or the likelihood of occurrence, of the annual climatic water deficit (inches of water) in Capitol Reef National Park. Respectively, the blue and red lines represent a Warm Wet and Hot Dry climate futures. The height of the plot shows the annual water deficit likely to occur annually. Water deficit is a measure of aridity, or the water plants would use if it were available. Higher temperatures will result in more evapotranspiration and more years that are exceptionally dry, especially for climates similar to a Hot Dry climate future.

1 For detailed methods, see A. N. Runyon, J. E. Gross, G. W. Schuurman, D. J. Lawrence, and J. H. Reynolds. (In prep). 2023 "Climate future products for national park planning." Natural Resource Report NPS/NRSS/NRR—2023/XXX. National Park Service, Fort Collins, Colorado.

water) (figure 2). Extremely dry years are more frequent for both climate futures, but the Hot-Dry climate future projects that by mid-century, a "normal" year will be similar to the most extreme dry conditions from the historical period. Should such extreme aridity prevail, surface waters and the park's vegetation will be strongly affected. Even with increased aridity, the frequency of potentially damaging intense precipitation is also likely to increase, although we are unable to quantify how much. Overall, projected climate changes can be thought of as increasing the intensity of weather. This "intensification" includes greater aridity, extremely hot temperatures, and periods that are both wetter and drier than previous observations. Rapid swings in plant-available moisture caused by very hot temperatures and extremely high evapotranspiration rates—flash droughts—may be particularly stressful to the park's historic orchards and native vegetation, with cascading effects on vegetation-dependent biota and ecological process such as erosion of exposed soil by wind and water.

Climate changes are already affecting park resources and will continue to do so. Extreme precipitation rates will likely increase infrastructure deterioration and maintenance requirements, cause erosion that exposes artifacts, and increase hazards to staff and visitors. Smaller snowpacks with reduced snow-water-equivalents will likely result in less runoff reaching the park, with unknown effects on subsurface water. By mid-century, the number of very hot days (over 90°F) are projected to increase by 250%–350% from the historical baseline of 18 days/year, and these high temperatures can pose hazardous conditions that restrict outdoor work by staff and recreation by visitors.

PRIORITY RESOURCES AND COMPONENTS

A priority resource is a cultural and/or natural resource that the National Park Service manages or monitors to maintain a park unit's purpose and significance, to address policy/law mandates, or to address scholarly and scientific research needs or findings. Some priority resources may be subdivided into one or more components. Priority resources drive the entire RSS process by focusing attention on those park resources that are critical and could most benefit from management direction within the next three to five years. Descriptions and additional information about the park's cultural and natural resources can be found in the cultural resource stewardship assessment, natural resource condition assessments, state of the park report, park planning documents, baseline cultural resource documents, and natural resource reports.

Table 2 lists priority resources and their components for the Capitol Reef National Park resource stewardship strategy.

Table 2. Priority Resources and Components

PRIORITY RESOURCE	COMPONENT(S)
FRUITA RURAL HISTORIC DISTRICT AND CULTURAL LANDSCAPE	- Cultural landscape features - Buildings and structures - Archeological sites - Ethnographic resources
HISTORIC ORCHARDS	- Irrigation system - Individual orchard footprints
RESOURCES OF SIGNIFICANCE TO TRADITIONALLY ASSOCIATED PEOPLES	- Petroglyphs and pictographs - Archeological resources (general) - Ranching-related resources and traditional practices - Orchard resources - Flora and fauna - Sacred sites
CULTURAL LANDSCAPES AND HISTORIC STRUCTURES	- Other cultural landscapes - Historic buildings - Other historic structures including trails and scenic roads
MUSEUM COLLECTIONS	- General collection - Natural history collections - Archives - Museum facility: Holt House

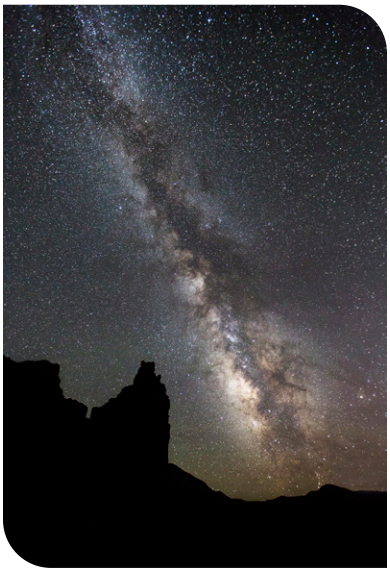


Table 2. Priority Resources and Components (continued)

PRIORITY RESOURCE	COMPONENT(S)
ARCHEOLOGICAL RESOURCES	- No components identified
NIGHT SKIES	- No components identified
SOUNDSCAPES	- No components identified
AIR QUALITY	- No components identified
VIEWS	- No components identified
NATIVE VEGETATION	- Grasslands and shrublands - Listed and endemic plants - Woodlands and forests - Biological soil crusts - Riparian and wetland vegetation (including springs, seeps and tinajas)
WATER RESOURCES	- Springs, seeps, and tinajas - Rivers, creeks, streams, wetlands and riparian areas - Water rights (state and federal reserve rights)
WILDLIFE	- Focal species: Mexican spotted owl, desert bighorn sheep, flannelmouth sucker, bluehead sucker, roundtail chub. - Vertebrates - Invertebrates (aquatic and terrestrial)
GEOLOGICAL FEATURES AND PROCESSES	- No components identified
PALEONTOLOGICAL RESOURCES	- No components identified
WILDERNESS	- No components identified
PARKWIDE RESOURCES	- Wildfire - Managing for a changing climate - Philanthropy - Volunteers and partnerships - Parkwide roads - Cross-boundary collaboration - Public education and outreach - Compliance actions for park resources - Land acquisition - Staffing

The park identified stewardship goals and activities that addressed parkwide resource issues and needs. “Parkwide resources” has several components that are generally topic-based rather than resource-based: wildfire; managing for a changing climate; philanthropic; volunteers and partnerships; parkwide roads; cross-boundary collaboration; general interpretation, education, and outreach; compliance actions for park resources; land acquisition; and staffing.

STEWARDSHIP GOALS AND ACTIVITIES

Based on the current status of information and the condition of natural and cultural resources, as well as stressors and other management considerations (e.g., urgency to protect the priority resources, feasibility, sequencing order), park staff identified a wide array of stewardship goals and associated management activities to consider. Whenever possible, activities were designed with integrated resource stewardship in mind, both in terms of their potential to improve the condition or understanding of multiple resources and/or their potential for efficient deployment through the integrated efforts of multiple staff. In addition, many of the activities developed include components that involve partnerships or coordination with regional NPS staff. The park made an effort to consider and document integrated resource management efforts within these activities and will seek to carry them out as described.

Tables 3a to 3q include each priority resource and components (if applicable), stewardship goals, and prioritized stewardship activities. For some priority resources, only short-term goals were developed. The team considered a wide variety of factors when determining if an activity was high, medium, or low priority, including feasibility and impact of the management activity, urgency, potential funding opportunities, and sequencing in relation to other activities. Medium- and low-priority activities are still valuable for achieving resource objectives, but they are generally less urgent or represent secondary approaches. Many of the medium- and low-priority activities may rise to the level of a high priority in the coming years as stewardship activities are implemented, stewardship goals are achieved, and/or resource conditions change over time.

Table 3a. Stewardship Goals and Stewardship Activities for Priority Resource: Fruita Rural Historic District and Cultural Landscape

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
FRUITA RURAL HISTORIC DISTRICT AND CULTURAL LANDSCAPE	The Fruita Rural Historic District (FRHD) and Cultural Landscape (CL) is managed to retain its historic character to provide meaningful connections for traditionally associated peoples and to serve as an interpretive and educational opportunity for visitors, while recognizing the potential for changes to these resources from climate change.	Treatment actions and preservation maintenance of the FRHD is performed in accordance with approved treatment plans and conducted in consultation with traditionally associated peoples.	- Continue to use and implement the existing cultural landscape report (CLR) recommendations to address treatment needs for the FRHD/CL pending completion of additional approved treatment plans (e.g., Holt House historic structure report [HSR], Gifford Farm Complex historic structure preservation guide [HSPG]). (High) - Submit a technical assistance request (TAR) and develop a project proposal for visual compatibility guidelines for small-scale features and criteria for the selection and use of materials throughout the FRHD. (High) - Informed by the Facility Management Software System (FMSS)–cultural landscape inventory (CLI)–facility investment plan (FIP) FMSS-CLI-FIP crosswalk, ensure all FRHD cultural landscape features are represented in FMSS, clarify condition information, and prioritize project proposals to reflect maintenance needs in the Project Management Information System (PMIS). (High) - Engage traditionally associated peoples (TAPs) in all planning efforts having the potential to affect resources or practices of traditional importance, such as visitor use planning, orchard strategies, and Gifford House Management. (Medium) - Reach out to The Church of Jesus Christ of Latter-day Saints and other external organizations and determine if they are interested in becoming preservation partners for the FRHD/CL to augment the preservation maintenance funding capacity of the park. (Medium)

Table 3a. Stewardship Goals and Stewardship Activities for Priority Resource: Fruita Rural Historic District and Cultural Landscape (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
FRUITA RURAL HISTORIC DISTRICT AND CULTURAL LANDSCAPE	The Fruita Rural Historic District and cultural landscape is managed to retain its historic character to provide meaningful connections for traditionally associated peoples and to serve as an interpretive and educational opportunity for visitors, while recognizing the potential for changes to these resources from climate change.	Priority baseline documents for the FRHD are updated or completed with accurate and reliable data recorded in the Cultural Resources Inventory System (CRIS) database to inform resource management.	- Continue to seek funding for a cultural landscape report and cultural landscape inventory update for the FRHD/CL (PMIS 315670). (High) - Continue to seek funding for a HSPG for Gifford Farm Complex (PMIS 321815). Determine additional HSR and treatment plan needs and prioritize project development. (High) - Determine ongoing prioritization and grouping of historic structure baseline documentation needs and prioritize project development in coordination with the regional historical architect and develop project proposals, if needed. (High) - Determine if the Historic American Landscape Survey (HALS) documentation is appropriate at this time for the FRHD/CL and prioritize project development in coordination with the regional historical landscape architect and develop a project proposal if needed. (Low) - Determine if Historic American Engineering Record (HAER) documentation is appropriate at this time for the FRHD irrigation system, and prioritize project development in coordination with regional historical landscape architect and develop a project proposal, if needed. (Low) - Submit a technical assistance request (TAR) to the regional historical landscape architect (Allison Kennedy [acting]) and regional facility manager (Eric Herrera) requesting an FMSS–CLI–FIP crosswalk for features of the FRHD/CL to inform status of existing assets in FMSS and identify gaps to address additional funding needs. (High)
FRUITA RURAL HISTORIC DISTRICT AND CULTURAL LANDSCAPE	The Fruita Rural Historic District and Cultural Landscape is managed to retain its historic character to provide meaningful connections for traditionally associated peoples and to serve as an interpretive and educational opportunity for visitors, while recognizing the potential for changes to these resources from climate change.	Threats to the FRHD, such as climate change and impacts from increasing visitation, are understood and incorporated into management strategies.	- Reengage in TAR 12024 (2021) requesting regional assistance with historic preservation site planning for FRHD. (High) - Complete a frontcountry visitor use management plan. (High) - Continue to include climate planning in any vegetation management planning throughout the FRHD/CL (outside of the orchards—cross reference similar activity under historic orchards). (Medium) - Evaluate the impacts on Gifford House from increased visitation due to pie sales, and, if needed, develop mitigation actions. (High) - See also activities related to climate change under Parkwide Resources.

Table 3a. Stewardship Goals and Stewardship Activities for Priority Resource: Fruita Rural Historic District and Cultural Landscape (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
FRUITA RURAL HISTORIC DISTRICT AND CULTURAL LANDSCAPE	The Fruita Rural Historic District and Cultural Landscape is managed to retain its historic character to provide meaningful connections for traditionally associated peoples and to serve as an interpretive and educational opportunity for visitors, while recognizing the potential for changes to these resources from climate change.	Treatment actions and preservation maintenance of the FRHD is performed in accordance with approved treatment plans and conducted in consultation with traditionally associated peoples.	- Continue to use and implement the existing CLR recommendations to address treatment needs for the FRHD/CL pending completion of additional approved treatment plans (e.g., Holt House HSR, Gifford Farm Complex HSPG). (High) - Submit a TAR and develop a project proposal for visual compatibility guidelines for small-scale features and criteria for the selection and use of materials throughout the FRHD. (High) - Informed by the FMSS-CLI-FIP Crosswalk, ensure all FRHD cultural landscape features are represented in FMSS, clarify condition information, and prioritize project proposals to reflect maintenance needs in PMIS. (High) - Engage traditionally associated peoples (TAPs) in all planning efforts having the potential to affect resources or practices of traditional importance, such as visitor use planning, orchard strategies, and Gifford House Management. (Medium) - Reach out to The Church of Jesus Christ of Latter-day Saints and other external organizations and determine if they are interested in becoming preservation partners for the FRHD/CL to augment the preservation maintenance funding capacity of the park. (Medium)
FRUITA RURAL HISTORIC DISTRICT AND CULTURAL LANDSCAPE	The Fruita Rural Historic District and Cultural Landscape is managed to retain its historic character to provide meaningful connections for traditionally associated peoples and to serve as an interpretive and educational opportunity for visitors, while recognizing the potential for changes to these resources from climate change.	The historical connections between Fruita and the surrounding communities are encouraged through public participation in planning and activities in the FRHD landscape by traditionally associated peoples.	- Coordinate with TAPs in planning for events highlighting traditional associations and practices of the FRHD/CL, such as Harvest Homecoming, cattle trailing, and volunteer vegetation planting. (Medium) - Formalize agreements with groups who are interested in practical experience with historic tree pruning, and establish tree pruning events. (Low) - Build and expand connections with the Utah State University extension, area high schools, local 4H organizations, and other groups to bring volunteers into the FRHD/CL. (Medium)

Table 3b. Stewardship Goals and Stewardship Activities for Priority Resource: Historic Orchards

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
HISTORIC ORCHARDS	The historic orchards and associated features are managed as functional, produce-bearing orchards, while maintaining their historic character and traditional associations to the extent feasible under climate change.	Improve and expand subject matter expertise and knowledge of orchard management. Management is well coordinated across park divisions and disciplines and includes input and support from traditionally associated communities.	- Finalize and implement a climate-informed orchard management strategy, including input from consulting parties (TAPs). (High) - When the fire management plan is updated, include orchard activities, such as pile and ditch burning. (Low) - Conduct pile burning and ditch burning. (Low) - Reach out to TAPs to gain an understanding (as they feel appropriate) of how they managed orchards, including in response to past extreme climate events. (Medium) - Continue implementing integrated pest management, soil health, and phenology monitoring programs. (Medium) - Continue to coordinate with Olmsted Center in future planning, and request their expertise as needed. (Low) - Continue to coordinate with historic orchard preservation groups, including for potential repository orchard development. (Low) - Submit a TAR to the Biological Resources Division (BRD) for a research project proposal (PMIS or internal) to better understand the role of pollinators in the historic orchards. (Medium) - Research alternative irrigation practices for orchards and other irrigated landscapes. (Medium)
HISTORIC ORCHARDS	The historic orchards and associated features are managed as functional, produce-bearing orchards, while maintaining their historic character and traditional associations to the extent feasible under climate change.	Improve the understanding of climate change threats to historic orchards.	- Reach out to the Olmsted Center as needed for guidance on managing climate change impacts on the orchard and the cultural landscape. (Low) - Develop a PMIS project for a climate change vulnerability assessment for the historic orchards. (High)

Table 3b. Stewardship Goals and Stewardship Activities for Priority Resource: Historic Orchards (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
HISTORIC ORCHARDS	The historic orchards and associated features are managed as functional, produce-bearing orchards, while maintaining their historic character and traditional associations to the extent feasible under climate change.	Interpretive and outreach programs maintain cultural connections between historic orchards, surrounding communities, and the public.	- Involve local community members, including local youth, as volunteers or employees in orchard work. (Medium) - Build and expand the Youth Conservation Corps program's involvement in orchard work. (Medium) - Establish a regular orchard community events program that would involve park interpretation and orchard programs. (Low) - Establish a volunteer orchard docent program. (Medium) - Rework the historic orchard interpretation program (long-range interpretive plan, interpretive waysides, self-guided tour app, docents, social media platforms) and include perspectives from TAPs and from local communities in general. (High) - Conduct an orchard-specific visitor use survey to better understand current visitor usage at different times of the year and what else visitors would like out of their orchard experiences. Leverage assistance from park partners to accomplish this. (Medium)
HISTORIC ORCHARDS	The historic orchards and associated features are managed as functional, produce-bearing orchards while maintaining their historic character and traditional associations to the extent feasible under climate change.	Preserve and propagate rare and unique fruit varieties relevant to the park's orchard system.	- Prepare a project proposal for additional ethnographic and historical research (e.g., traditional use study), potentially including another round of oral histories with TAPs, to better understand historical orchard management practices, fruit varieties, and other traditional knowledge and aspects of historical orchard development. (High) - Continue planting Fruita-specific varieties and developing nursery contacts and other professional contacts (historic orchard preservation groups). (Medium) - Develop a living orchard repository program and identify an orchard in which to locate it. Integrate this into existing replanting projects in PMIS. Consult with TAPs about this program. (Medium) - Investigate the preservation of plant material through the National Laboratory for Generic Resources Preservation (US Department of Agriculture's Agricultural Research Service). The Biological Resources Division is working on a servicewide seed preservation program and may have guidance. (Low) - Preserve specimens, and accession them into the park natural history collection (herbarium records). (Low) - In cooperation with the Olmsted Center and the Washington Support Office (WASO) Park Cultural Landscape Program (Susan Dolan), develop guidelines for sharing park fruit tree genetic material. (Medium)

Table 3c. Stewardship Goals and Stewardship Activities for Priority Resource: Resources of Significance to Traditionally Associated Peoples

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
RESOURCES OF SIGNIFICANCE TO TRADITIONALLY ASSOCIATED PEOPLES	Relationships with traditionally associated peoples are maintained, and the meanings assigned to traditional natural and cultural resources and the landscapes they form are documented and incorporated into park planning.	Priority baseline documents and surveys for resources of significance to traditionally associated peoples are completed and inform resource management.	- Review and refine the park's list of TAPs: Coordinate with the regional cultural anthropologist. (High) - Coordinate with the regional office on a review of existing ethnographic baseline documents for needed updates or revisions (orchard resource ethnographic evaluation, tribal ethnographic overview and assessment (EOA), ranching EOA) and prioritize project development. (High) - Coordinate with the regional office on additional ethnographic study needs that identify traditional users and uses at the park (e.g., traditional use study), and prioritize project development. (Medium) - Seek regional assistance in developing ethnographic study proposals and ensure adequate scoping to include data entry in the CRIS-Ethnographic Resources (CRIS-ER) database. (Medium) - Ensure planning documents are informed by ethnographic research, and adequately consider ethnographic resources in the park (e.g., visitor use management plans, orchard management strategy). For example, rapid ethnographic assessments can be done quickly to inform specific planning projects. The regional cultural anthropologist can help coordinate these. (Low) - Further identify ethnographic resources of significance to the traditionally associated ranching community through project proposal development for National Historic Preservation Act (NHPA) Section 110 inventory informed by consultation with the TAP. (Medium)
RESOURCES OF SIGNIFICANCE TO TRADITIONALLY ASSOCIATED PEOPLES	Resource preservation and monitoring strategies are developed in collaboration with traditionally associated peoples that minimize impacts from natural and human-caused harm, including potential threats due to climate change.	The park has an improved understanding of climate change threats to resources of cultural significance.	- Reach out to the Regional Landscape Conservation and Climate Change Program (Pam Benjamin) and Regional Cultural Anthropologist (Kim Greenwood) for additional information and potential points of contact regarding tribal perspectives on climate change, including tribal groups conducting climate change research/ management. (Medium) - Develop a focused condition assessment proposal for culturally significant plants. (Low)

Table 3c. Stewardship Goals and Stewardship Activities for Priority Resource: Resources of Significance to Traditionally Associated Peoples (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
RESOURCES OF SIGNIFICANCE TO TRADITIONALLY ASSOCIATED PEOPLES	Resource preservation and monitoring strategies are developed in collaboration with traditionally associated peoples that minimize impacts from natural and human-caused harm, including potential threats due to climate change.	The park fosters and maintains strong relationships with traditionally associated peoples (TAPs) and ensures that park resources are managed with an appropriate degree of cultural sensitivity.	- Enroll park staff in cultural sensitivity training. (Medium) - Enroll select park staff in tribal consultation training. Contact Catherine Purchis regarding the training schedule. (Low) - Continue to pursue efforts to establish regular/ periodic group consultation meetings with all TAPs, building upon existing relationships and developing new ones as necessary. (High) - Consult with TAPs about proposed research and stewardship of cultural and natural resources with ethnographic meaning, consistent with federal guidance (Executive Orders 13175 and 13352) and NPS policy. (Medium) - Develop protocols for consultation and other forms of engagement with Tribes and other TAPs. (Low) - Discuss the need for monitoring protocols for ethnographic resources. Ensure monitoring needs are captured in CRIS-ER. (Low) - Continue to improve consultation with TAPs when seeking determinations of eligibility on properties that may be of religious and cultural significance. (Low)

Table 3d. Stewardship Goals and Stewardship Activities for Priority Resource: Cultural Landscapes and Historic Structures

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
CULTURAL LANDSCAPES AND HISTORIC STRUCTURES	Cultural landscapes and historic structures are documented and managed for protection of their historic character to provide meaningful connections for traditionally associated peoples and to serve as an interpretive and educational opportunity for visitors, while recognizing the potential for changes to these resources from climate change.	Baseline documents and surveys for cultural landscapes and historic structures are completed and inform resource management.	- Submit a TAR to the regional historical landscape architect to assess and clean up the CRIS-Cultural Landscapes (CRIS-CL) database. After its initial creation (likely in the 1990s) this official list of potential cultural landscapes in CRIS-CL may never have been reevaluated to determine whether all recommended landscapes are valid according to current standards or whether there are additional cultural landscapes in the park. Currently, there are seven landscapes listed in CRIS-CL. However, published CLIs have recommended additional landscapes that do not yet have placeholder records. (Medium) - With assistance from the regional historical landscape architect, identify which of the placeholder cultural landscapes in CRIS-CL (currently seven) are the highest priority for documentation (via CLI and/or CLR). As of November 2022, CLIs for the Scenic Drive/Capitol Gorge landscape and the Mission 66 landscape were under way. (Medium) - With assistance from the regional historical architect, identify HSR needs and priorities for structures in the park. (High) - With assistance from the regional historical architect, identify treatment document needs for the three structures listed as shadow records in the CRIS-Historic Structures (CRIS-HS) database, namely the visitor center, Capitol Gorge picnic area, and Petroglyph Narrows picnic area. (Low) - Submit a TAR to update CRIS-HS to fully represent the park's historic structures (including Mission 66, ranching, and mining structures) and to update existing records. (Medium)
CULTURAL LANDSCAPES AND HISTORIC STRUCTURES	Cultural landscapes and historic structures are documented and managed for protection of their historic character to provide meaningful connections for traditionally associated peoples and to serve as an interpretive and educational opportunity for visitors, while recognizing the potential for changes to these resources from climate change.	Resource preservation and monitoring strategies are developed that minimize impacts from natural and human-caused harm, including impacts from continued use and potential threats due to climate change.	- Establish a comprehensive historic structures assessment and maintenance program that informs the management of resources with current data about resource condition and maintenance needs and that addresses ongoing impacts and emerging threats in a prioritized and systematic manner; ensure that PMIS proposals reflect treatment needs. (High) - Update the park's administrative history: Submit a TAR to the regional historian to prepare a PMIS statement. (High) - Evaluate the need for an updated historic resource study (for example, vis-à-vis the forthcoming Mission 66 National Register of Historic Places documentation): Submit a TAR to the regional historian for assistance with the evaluation, and if necessary, prepare a PMIS statement for an updated historic resource study. (Low) - See also activities related to climate change under Parkwide Resources.

Table 3e. Stewardship Goals and Stewardship Activities for Priority Resource: Museum Collections

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
MUSEUM COLLECTIONS	Priority museum collection core documentation and assessments of conservation needs are current and complete.	Priority baseline documents for museum collections are completed and inform resource management.	- Continue to seek funding (and explore other strategies) to complete baseline documents providing guidance for the park museum program, including PMIS 308270: Museum facility protection plan, PMIS 240568: scope of collection statement, and PMIS 241014: Collection management plan. Completing these documents is the first step that the park's museum program needs to take before addressing other needs. (High) - Seek assistance from the Regional Museum Services Program to inform priority planning needs and develop PMIS proposals reflective of that need through existing TAR 15584 (2021). (High) - Submit museum fire section of the structural fire management plan for regional curatorial review. (Low)
MUSEUM COLLECTIONS	Priority museum collection core documentation and assessments of conservation needs are current and complete.	Collection conservation needs are assessed and addressed.	- Finalize and implement the museum program housekeeping plan. (Medium) - Submit a project proposal to complete a collection condition survey and implement it to ensure that recommendations are actionable and feasible. (Low)
MUSEUM COLLECTIONS	Museum collections are conserved in good condition and are made accessible for public research and park interpretive programs.	Curation facilities meet current NPS standards for the storage and preservation of collection objects.	- Implement recommendations from the Holt House HSR (forthcoming) to improve facility condition standards and to address needs identified in the museum program checklist. (Medium) - Continue seeking assistance from the Regional Museum Services Program through TAR 12018 (2021) to assess current museum preventative preservation programs for collections housed at the park and the development of strategies to correct deficiencies. (Medium) - The resources management building (including the herbarium) is located in a flood plain: Ensure that the continuity of operations plan has a current and viable plan for evacuating collections in the event of a flood. (Medium)

Table 3e. Stewardship Goals and Stewardship Activities for Priority Resource: Museum Collections (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
MUSEUM COLLECTIONS	Museum collections are conserved in good condition and are made accessible for public research and park interpretive programs.	Museum collections are leveraged by the park interpretive program to raise public awareness about the history and traditional significance of park resources, and to encourage resource protection.	- Prepare and submit a project proposal to conduct additional cultural affiliation studies on objects within the park's museum collection. (Low) - Review existing collections with Interpretation Division staff and determine opportunities to fabricate replicates of museum collection objects for hands-on/in-person use in interpretive activities with the public. (Low) - Seek funding/support for formal photography and scans of collection objects and archives for use in interpretive programming, and to make them searchable to researchers. (Low) - Seek funding/support to digitize analog oral histories and transcripts. (Medium) - Upload oral history transcripts to NPGallery. Confirm that park has permission for use of oral histories. (Low) - Work with the Interpretation Division and look for opportunities to incorporate the natural history collection into interpretation (herbarium, paleontological specimens). (Low) - Conduct a brown bag lunch event to train park staff on using existing finding aids to search the museum collection for objects/archives that could be used to enhance interpretation programming and other park operations. (Medium) - Seek funding/support (for example, through philanthropic organizations) to complete the digitization of documents held at the Western Archeological and Conservation Center, so that the park can quickly access them as needed. (High)

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Table 3f. Stewardship Goals and Stewardship Activities for Priority Resource: Archeological Resources

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
ARCHEOLOGICAL RESOURCES	Historic and precontact archeological resources are documented, integrated into park planning processes, and managed for protection, preservation, and interpretive opportunities, while recognizing the potential for changes to these resources from climate change.	A comprehensive archeological site monitoring and maintenance program is established and informs resource management with current data about resource conditions, threats, and disturbances.	- Prepare and submit a project proposal to develop a comprehensive archeological monitoring and maintenance plan in coordination with consulting parties and TAPs, including a prioritized list of archeological sites for monitoring for impacts from climate change and other threats. (Medium) - Prioritize and prepare maintained archeological site data sheets for entry into FMSS to implement maintenance treatment needs. (High) - Develop a schedule for and implement follow-up monitoring of sites that have undergone graffiti mitigation. (Low) - Review internal criteria for designating archeological and paleontological sites as class 1, 2, or 3, and update if needed; determine which sites should be designated based on these criteria. (High) - As part of an archeological overview and assessment (cross-reference previous activity), employ the cultural resource exposure and vulnerability assessment tool to assess the vulnerability of park archeological resources to potential impacts from climate change. (Low) - Establish rules on the method of data protection for sensitive archeological resources in coordination with the regional archeologist and regional cultural anthropologist to ensure consistency with the suite of federal laws (i.e., NHPA, Archeological Resources Protection Act, National Parks Omnibus Management Act) and NPS Management Policies 2006 (i.e. National Register Bulletin 29, 519 Departmental Manual 2, Director's Order 28a) and guidance (2014 NPS Briefing on Archeological Resource Protection: Confidentiality of Sensitive Data, 2018 Guidance for Working with Outside Parties Requesting to Use NPS Archeological and Ethnographic Data, 2019 NPS Briefing on Archeological Data Sharing Concerns with the GIS Enterprise Database) protecting the confidentiality of site location information before dissemination or providing access to individuals that do not meet the secretary of the interior professional qualifications for archeologists. (High) - Following the development of appropriate rules on the method of data protection for sensitive archeological resources, develop and implement nondisclosure agreements (NDA) for superintendent approval to provide read-only access to archeological location information to NPS staff to fulfill professional duties as an NPS employee. The NDA must justify any disclosure and make a determination that the release of the information will not "create a risk of harm to such resources or to the site at which such resources are located." Create a separate NDA template for non-NPS persons requesting information. (High) - The Cultural Resource Program works with the Interpretation Division and the Visitor and Resource Protection Division to share data relevant to enhancing resource protection. For example, park staff/volunteers in the field could play a role in monitoring for resource disturbance. (High)

Table 3f. Stewardship Goals and Stewardship Activities for Priority Resource: Archeological Resources (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
ARCHEOLOGICAL RESOURCES	Historic and precontact archeological resources are documented, integrated into park planning processes, and managed for protection, preservation, and interpretive opportunities, while recognizing the potential for changes to these resources from climate change.	Priority baseline documents and surveys for archeological resources are completed and inform resource management and protection.	- Continue to update and resubmit PMIS 308255 for an archeological overview and assessment until funded to inform priority needs related to an archeological survey and a formal program of prioritized research to address existing data gaps. Potential to evaluate scope of PMIS proposal to scale in proportion to existing data gaps to reduce cost/effort and identify other potential fund sources. (High) - Prepare and submit project proposals for archeological management plan(s) to guide preservation and treatment strategies for both frontcountry and backcountry resources. (High) - Submit a TAR and coordinate with regional archeologist to implement new guidelines for developing archeological management plans to inform fiscal year (FY) 2024 funding of grazing archeological management plan (PMIS 322414). (Low) - Prepare and submit project proposals to increase or update the percentage of NHPA Section 110 inventory in priority areas of the park. (Medium) - Develop a PMIS proposal to complete focused archeological surveys on park roads and trails. (High)

Table 3g. Stewardship Goals and Stewardship Activities for Priority Resource: Night Skies

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
NIGHT SKIES	Night skies are protected and enhanced by monitoring conditions, increasing outreach, and fostering buy-in from the community and nearby partners in the shared night sky resource.	The park has an improved understanding of condition and trends of the park's night skies through International Dark Sky Association (IDA) and NPS monitoring practices	- Submit a TAR to the Natural Sounds and Night Skies Division (NSNSD) to implement a full night skies assessment to fill in data gaps. (Low) - Encourage new staff to participate in the NSNSD Night Sky Academy training. (Low) - Continue IDA-required monitoring. (Medium) - Acquire the report from the Economic Impact and Visitor Experiences of Utah's Night Skies research project. (Medium)
NIGHT SKIES	Night skies are protected and enhanced by monitoring conditions, increasing outreach, and fostering buy-in from the community and nearby partners in the shared night sky resource.	Light at night from park operations is reduced.	- Update light fixtures to remain compliant with new IDA lighting standards. (Medium) - Update the lighting plan. (Low)
NIGHT SKIES	Night skies are protected and enhanced by monitoring conditions, increasing outreach, and fostering buy-in from the community and nearby partners in the shared night sky resource.	Light at night from visitor activities in the park is reduced.	- Enforce campground lighting guidelines by establishing regulations in the Superintendent's Compendium. (Low) - Develop and share educational messaging about light painting for night photography, and enforce existing regulations. (High)
NIGHT SKIES	Night skies are protected and enhanced by monitoring conditions, increasing outreach, and fostering buy-in from the community and nearby partners in the shared night sky resource.	The park partners with neighboring communities, landowners, and other entities to reduce external impacts on night skies.	- Continue to engage with Torrey Dark Skies and the Entrada Institute. (Medium)
NIGHT SKIES	Night skies are protected and enhanced by monitoring conditions, increasing outreach, and fostering buy-in from the community and nearby partners in the shared night sky resource.	Opportunities for the public to access and understand the importance of dark night skies are enhanced.	- Continue to work with the Entrada Institute to host Heritage StarFest. (Low) - Incorporate native stories and native voices in night sky programming. (Medium)

Table 3h. Stewardship Goals and Stewardship Activities for Priority Resource: Soundscapes

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
SOUNDSCAPES	Natural and cultural soundscapes are protected and enhanced by monitoring conditions, increasing outreach, and fostering buy-in from the community and nearby partners in the shared acoustic environment.	The park has an improved understanding of the park soundscape condition and trends through continued monitoring, compiling existing information, identifying sensitive resources, assessing future research needs, and educating park staff about impacts on park resources.	- Coordinate with NSNSD on existing TARs to implement a baseline soundscape assessment. (High)
SOUNDSCAPES	Natural and cultural soundscapes are protected and enhanced by monitoring conditions, increasing outreach, and fostering buy-in from the community and nearby partners in the shared acoustic environment.	Noise from park operations is reduced.	- Explore the feasibility of using quiet pavement on the Scenic Drive rehab and/or chip sealing operations. (Low) - Explore opportunities to reduce noise generation (e.g., purchase quieter equipment when replacing). (Low) - As feasible and appropriate, implement other best management practices from Director's Order 47 and draft Reference Manual 47. (Low)
SOUNDSCAPES	Natural and cultural soundscapes are protected and enhanced by monitoring conditions, increasing outreach, and fostering buy-in from the community and nearby partners in the shared acoustic environment.	Noise from visitor activities in the park is reduced.	- Continue enforcing the no-idle rule in the Superintendent's Compendium. (Low) - Implement a change in the campground to allow generator use in only one loop. (Medium) - As feasible and appropriate, implement other best management practices from Director's Order 47 and draft Reference Manual 47. (Low)
SOUNDSCAPES	Natural and cultural soundscapes are protected and enhanced by monitoring conditions, increasing outreach, and fostering buy-in from the community and nearby partners in the shared acoustic environment.	The park partners with neighboring communities, landowners, and other entities to reduce external noise impacts.	- Improve communication among NSNSD, the park, and the Federal Aviation Administration. (Medium) - Evaluate the need for an air tour management plan. (Low) - Be aware of changes to air tours. (Low)
SOUNDSCAPES	Natural and cultural soundscapes are protected and enhanced by monitoring conditions, increasing outreach, and fostering buy-in from the community and nearby partners in the shared acoustic environment.	The park provides enhanced opportunities for visitors to access and understand the importance of natural and cultural sounds.	- Expand interpretive programming that discusses the importance of soundscapes and what visitors can do to reduce impacts. (Medium)

Table 3i. Stewardship Goals and Stewardship Activities for Priority Resource: Air Quality

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
AIR QUALITY	The park has an improved understanding of air quality conditions and trends and air pollution impacts and maintains the long-term air quality data record through continued in-park and nearby monitoring of visibility, particulate matter, ozone, and pollutant deposition.	The park has an improved understanding of air quality through continued monitoring, compiling existing information, identifying sensitive resources, assessing future research needs, and educating park staff about impacts on park resources.	- Maintain familiarity with existing online park air quality information provided by Air Resources Division (ARD), including monitor locations, park and regional conditions and trends, the CARE ARD air profile, park species sensitive to ozone/nitrogen and sulfur deposition, nitrogen critical loads and exceedances, nearby sources of air pollution, and the smoke toolkit. (Low) - Continue to support the IMPROVE air quality monitoring station, including sampling, site audits, and site operator training. (Medium) - Investigate particulate matter (PM)/smoke monitoring opportunities with ARD, considering nearby PM monitors. (Medium) - Investigate the implementation of an ozone study and/or ozone monitoring with ARD for park representative data to improve the understanding of condition and determine whether ozone exceedances are occurring. (High) - Request assistance from the Intermountain Region (IMR) and ARD to survey for foliar injury of ozone-sensitive plant species (NPSpecies database). (Medium) - Coordinate with ARD and IMR to assess future needs in air quality research, including ozone implications to riparian vegetation and nitrogen deposition critical loads, to improve the understanding of impacts on sensitive resources in arid ecosystems. (Low) - Coordinate with ARD for 2023 and future annual sampling and continued participation in the National Dragonfly Mercury Project. (Medium) - Coordinate with ARD and the US Geological Survey (USGS) to resubmit the USGS-NPS Water Quality Partnership funding request for "Determining Drivers of Extreme Mercury Bioaccumulation in Arid NP Units of NCPN" study. Continue submitting the project as a Natural Resource Preservation Program (NRPP) PMIS proposal. Once funded, collaborate with ARD, USGS, and researchers to implement and derive recommendations from study. (High) - Subscribe to the Utah Department of Environmental Quality email alerts to stay current on new and existing sources of air pollution by receiving public notices, department updates, and regulatory information. (Low) - Submit a TAR to ARD to update the 2015 CARE air quality summary, including a compilation of existing data, condition, threats, sensitive resources, and research. (Low) - Include air quality summary information in staff training. (Medium)

Table 3i. Stewardship Goals and Stewardship Activities for Priority Resource: Air Quality (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
AIR QUALITY	The park has an improved understanding of air quality conditions and trends and air pollution impacts and maintains the long-term air quality data record through continued in-park and nearby monitoring of visibility, particulate matter, ozone, and pollutant deposition.	Information about air pollution impacts is provided to NPS management, air regulatory agencies, the public, the scientific community, and other stakeholders	- Provide an air quality section on the park website using the NPS content management system air quality element to provide content and links to park air quality condition, trends, and implications. (Medium) - Explore options to interpret ozone-sensitive and bioindicator plant species to help interpret a tangible park resource connection with park resources. (Low) - After obtaining appropriate monitoring data or forecast information, develop and implement a park air quality health advisory protocol for PM2.5/smoke and ozone. (Low) - After obtaining appropriate monitoring data or forecast information, provide air quality forecasts and/or advisory information (smoke/particulate matter/ozone) to staff and visitors, similar to weather. (Low) - Include park air quality health advisory information (ozone, PM2.5/smoke) and weather hazards in employee job hazard analysis for staff working outdoors. (Low)
AIR QUALITY	The park perpetuates the best possible air quality conditions for the protection of resources affected by air pollution, eliminating human-caused visibility impairment by the year 2064 (where the average visibility is < 2 deciviews above natural conditions), and remains in attainment for the Environmental Protection Agency (EPA) National Ambient Air Quality Standards.	The park serves as an environmental leader by reducing park air pollutant emissions, improving park sustainability and environmental management, and demonstrating the park's commitment to do its part for air/water quality, night sky, and climate change.	- Reestablish a park Green Team. (Medium) - Become a NPS Climate Friendly Park with action plan. (Low) - Develop and disseminate park Energy, Waste, Water, and Lighting Guidelines for park staff and volunteers. (Low) - Establish or continue fleet management practices that purchase more green vehicles. (Low) - Assess use of photovoltaics (solar) in the park to replace some portions of conventional power use. (Low) - Continue to engage in public and employee education and policy that focuses on minimizing vehicle idling, reducing or eliminating emissions and fuel waste. (Low) - Update the park's greenhouse gas inventory over time to assess progress and set new goals for the park's Climate Friendly Parks Action Plan. (Low) - When fire management plan is updated, include mitigation measures to minimize smoke production. (Low)

Table 3i. Stewardship Goals and Stewardship Activities for Priority Resource: Air Quality (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
AIR QUALITY	The park perpetuates the best possible air quality condition for the protection of resources affected by air pollution, eliminating human caused visibility impairment by the year 2064 (where the average visibility is < 2 deciviews above natural conditions), and remains in attainment for the EPA National Ambient Air Quality Standards.	The park collaborates with other federal, state, regional and local planning organizations, and stakeholders to reduce air pollution impacts in the park from sources of air pollution.	- Continue to coordinate with ARD and the regional office during the EPA's deliberation towards the finalization of Utah's round two (2018–2028) regional haze state implementation plan or federal implementation plan, as required by the August 2023 statutory deadline. (Low) - In collaboration with ARD and IMR, continue to provide information necessary to inform review of emission source permit applications to prevent significant deterioration and energy development proposals with the potential to affect park resources. (Low) - Continue coordinating with central Utah fire management and smoke management assistance to aid in reducing pollutants and particulate density (smoke) during high-visitation seasons to increase visibility of park features. (Low) - Explore ongoing opportunities to work cooperatively with regional and local agencies and stakeholders to reduce air quality impacts, including Envision Utah, Breathe Utah, Utah Clean Air Alliance, and Utah Clean Air Partnership. (Low)

Table 3j. Stewardship Goals and Stewardship Activities for Priority Resource: Views

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
VIEWS	The park protects, improves, and monitors the condition of views important for natural scenery and cultural resources, both within and across park boundaries, while collaborating with partners for cooperative conservation of the park's scenery, including expansive views to the horizon, geologic formations, high forested slopes, and the Fruita Rural Historic District.	Park views are inventoried and assessed over time to monitor changes in condition.	- Submit a TAR to the ARD Visual Resources Program to facilitate a discussion to identify important views and for a visual resource inventory to establish baseline condition of selected views. (High) - Conduct a visual resource inventory using the NPS ARD process to establish a baseline condition of selected views by documenting scenic quality and view importance. (Medium) - Conduct a visual impact assessment of proposed internal and external project(s) that would have impacts on views. (Medium) - Repeat the visual resource inventory every 5–10 years, or as landscape changes are observed, to monitor changes in condition. (Low) - Submit a TAR to ARD to pre-plan how the park can respond to energy development proposals that will impact important views. (Medium)
VIEWS	The park protects, improves, and monitors the condition of views important for natural scenery and cultural resources, both within and across park boundaries, while collaborating with partners for cooperative conservation of the park's scenery, including expansive views to the horizon, geologic formations, high forested slopes, and the Fruita Rural Historic District.	Visual intrusions, contrast, and changes to views are minimized to the extent possible within the park.	- Adopt ARD-recommended visual resource best practices and facility design guidelines or develop a park-specific set. (Low) - Explore options for establishing a portion of visitor and/or business functions outside of the park. (Low) - Evaluate options to move portions of powerlines along State Route (SR) 24 underground. (Low) - Remove unnecessary signs in the park. (Low) - Manage vegetation to improve views, including restoration, screening, and clearing obstructions. (Medium) - Include and conduct the cyclic maintenance of views/viewpoints/overlooks through FMSS. Activities could include clearing vegetation at viewpoints—for example, at Petroglyph Panel. (Low)
VIEWS	The park protects, improves, and monitors the condition of views important for natural scenery and cultural resources, both within and across park boundaries, while collaborating with partners for cooperative conservation of the park's scenery, including expansive views to the horizon, geologic formations, high forested slopes, and the Fruita Rural Historic District.	Opportunities for visitors to access and understand the importance of park views are enhanced.	- Add photos of views, including those identified in the visual resource inventory, to the scenic photo gallery on the park's website. (Medium) - Establish park and/or partner webcam(s) to provide/enhance the virtual and seasonal experience of park scenery. (Low) - Continue to support an artist-in-residence program to continue sharing the beauty, diversity, and value of park scenic wonders. (Low) - Continue to investigate opportunities to establish or increase accessibility at park overlooks and programmatic accessibility to increase visitor opportunity to experience and appreciate the diversity of park scenery. (Medium) - Explore other interpretive opportunities to increase visitor opportunity to experience and appreciate the diversity of park scenery (e.g., social media posts, guided hikes, interpretation of orchards). (Medium)

Table 3k. Stewardship Goals and Stewardship Activities for Priority Resource: Native Vegetation

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
NATIVE VEGETATION—Grasslands and Shrublands	N/A	Current ecosystem conditions are determined via new surveys and synthesis of existing data/ reports (e.g., Interpreting Indicators of Rangeland Health, Proper Functioning Condition, NCPN monitoring, and invasive species mapping).	- Submit a TAR to the Biological Resources Division (BRD) (John Mack, Jordan Spaak) to get funding and support to continue Indicators of Integrated Range Health monitoring. (Medium) - Support ongoing Northern Colorado Plateau Inventory & Monitoring Network (NCPN) upland vegetation monitoring and ask NCPN to expand monitoring to the southern portion of the part. (Low) - Work with NASA DEVELOP on remote-sensing mapping of invasive species. Park seasonal staff conduct field surveys to ground-truth remote-sensing work. (Medium) - Obtain the latest list of resources (including plants) in the park that are culturally sensitive to inform management planning. Request that the regional cultural anthropologist ask permission from Tribes to release this information (i.e., permission to copy the relevant data from the recent Aches National Park and Bryce Canyon National Park study to address this short-term data need while the park waits for a full CARE-specific study to get funded). (Low) - Continue existing park vegetation monitoring, as needed (e.g., listed and endemic plant species, invasive plant species). (Medium) - Assess the need to update the vegetation mapping, and if needed submit a TAR to get funding and support to do additional mapping. (Medium)
NATIVE VEGETATION—Grasslands and Shrublands	N/A	A climate-informed vegetation management plan is completed.	- Conduct internal pre-planning to prioritize the actions needed to complete a climate-informed vegetation management plan and to help determine most effective order of activities for accomplishing the goal. (High) - Develop a project proposal for funding to develop a vegetation management plan. (High) - Submit a TAR to BRD to get funding to develop a vegetation management plan. (High) - Develop desired conditions using data collected from monitoring, modeling efforts (e.g., NASA DEVELOP project) and literature review. (Low) - Complete the report for the Upper South Desert restoration experiment, and use the results, along with a literature review, to have targeted discussions with relevant practitioners and researchers (e.g., Seth Munson, Mike Duniway, Liz Ballenger, Katie Vinzant). (Medium) - Coordinate the development of a vegetation management plan with the redevelopment of the fire management plan. (Low)

Table 3k. Stewardship Goals and Stewardship Activities for Priority Resource: Native Vegetation (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
NATIVE VEGETATION—Grasslands and Shrublands	N/A	Invasive species are removed in grasslands and shrublands, and native species are restored where appropriate/feasible to support the overall goal of maintaining and restoring ecosystem function and native biodiversity and ecological relationships.	- Use results from the NASA remote-sensing project to prioritize areas for verification via ground surveys and the eventual treatment and restoration. (Medium) - Bring the regional invasive plant management team the park to continue invasive species removal. (High) - Develop a Bipartisan Infrastructure Law (BIL)-funded project to create a seed-increase field in conjunction with Utah Valley University (UVU) to grow native plants for restoration projects. (Low) - Develop multiagency (Bureau of Land Management [BLM], US Forest Service [USFS], NPS) invasive species proposals for BIL funding to work across park boundaries to address invasive species. (Medium) - Continue Fremont River Corridor and other riparian area (e.g., Pleasant Creek and Oak Creek) treatments of invasive woody vegetation. (High) - Continue Upper South Desert restoration experiment efforts and develop restoration recommendations based on experiment results, literature review, and discussions with practitioners and researchers. (High) - Develop a project to control/eradicate cheatgrass near the Cedar Mesa Campground, and reseed as needed with native vegetation. (Medium)
NATIVE VEGETATION—Grasslands and Shrublands	N/A	Grassland/shrubland restoration success is assessed via an ecosystem approach such as monitoring multiple trophic levels.	- Develop an NRPP proposal, working with USGS to identify research to inform the monitoring process (e.g., Before-After-Control-Impact study). (Low) - Hold conversations with NCPN to determine if any of their ongoing monitoring could be used as part of the monitoring plan. (Medium) - Develop a multifaceted monitoring plan following implementation of the vegetation management plan that looks at all trophic levels (arthropods, vertebrates, plants, etc.). (Low)
NATIVE VEGETATION—Listed and Endemic Species	N/A	Populations and habitats of federally listed plant species are protected where feasible under projected climatic change and monitored.	- Continue management actions to protect populations and habitats (including vehicle exclusion devices such as bollards). (High) - Promote and engage outside researchers to understand the needs of federally listed plant species. (Low) - Continue engaging with the US Fish and Wildlife Service (USFWS) for informal and formal consultation with respect to the management of listed species. For example, see the related activities listed under the next short-term goal. (High) - Develop a PMIS proposal to complete focused surveys for listed plant species along park roads, trails, and other high-use areas. (High)

Table 3k. Stewardship Goals and Stewardship Activities for Priority Resource: Native Vegetation (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
NATIVE VEGETATION—Listed and Endemic Species	N/A	The park has an efficient and scientifically defensible population monitoring strategy within potential habitat for listed and endemic plant species, with the initial focus on the listed cactus species.	- Work with USFWS to determine the need for (and data availability to support) population dynamic studies and the type of data that needs to be collected. (High) - Submit a TAR to BRD to develop an efficient and scientifically defensible population monitoring strategy. (High) - Work with USFWS on the cactus seed viability study. (Medium) - Increase surveys of potential habitat to inform all areas of the park for listed plants and plants of limited distribution. (Medium) - Continue partnering with BLM to monitor listed and endemic species at a rangewide scale rather than a land-ownership scale. (Medium)
NATIVE VEGETATION—Woodlands and Forests	N/A	The park contains a diversity of woodlands and forest communities that are structurally and compositionally complex and support native biodiversity and ecosystem functions, even if species assemblages and distributions shift.	- Continue to treat invasive species in woodlands and forests. (Medium) - Consider the need for prescribed burning in revised fire management plan. (Low) - Assess the need for pinyon-juniper treatment in other areas if there is encroachment. (Low) - Convert the government land office surveys (late 1800s/early 1900s) into geospatial and other database records to better understand pinyon-juniper and other plant diversity across the landscape. (Low)
NATIVE VEGETATION—Woodlands and Forests	N/A	The park has an improved understanding of woodland and forest communities' condition and trends via vegetation inventory, monitoring, and assessments.	- Clean and compile the information from USFS' forest inventory analysis. (Low) - Periodically assess forest health through a USFS TAR. (Low) - Periodically reach out to Zion National Park (ZION) fire staff and request that they model fire threats and/or help park assess fire threats to pinyon-juniper communities. (Low) - Determine whether there is a research need to understand potential for assisted migration where woodland/forest species might be lost. (Low) - Conduct a forest drought susceptibility assessment (e.g., mapping and sampling effort) that looks at the long-term effects of drought in pinyon-juniper communities. (Medium) - Reach out to the regional cultural anthropologist for a list of traditionally associated peoples (TAPs) who used pinyon-juniper communities. (Low) - When the fire management plan is updated, include cross-boundary forest management strategies. (Low)

Table 3k. Stewardship Goals and Stewardship Activities for Priority Resource: Native Vegetation (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
NATIVE VEGETATION—Biological Soil Crusts	N/A	Lichens and biological soil crusts are maintained, preserved, and restored to the degree possible under projected climate change.	- Implement a small block grant study on social trails and other human impacts on natural resources. (Medium) - Develop and implement standard operating procedures (SOPs) for mitigating damage to soil crusts (e.g., placing barriers to delineate areas where the park is seeing high impacts, placing visitor information signs, creating a backcountry management plan). (Low) - See also activities related to the vegetation management plan under Native Vegetation.
NATIVE VEGETATION—Biological Soil Crusts	N/A	The park has an improved understanding of the extent and condition of lichens and biological soil crusts in the park.	- Develop a PMIS project proposal or submit a TAR to NCPN to complete an inventory of lichens and biological soil crusts in priority areas (e.g., where lichens and biological soil crusts are of greater importance to the vegetation community). (Low)
NATIVE VEGETATION—Riparian and Wetland Vegetation	N/A	The functionality and complexity of riparian and wetland vegetation (including springs, seeps, and tinajas) is maintained to the degree possible under projected climatic change.	- Continue to manage nonnative woody species in riparian and wetland vegetation areas. (High) - Develop a riparian monitoring strategy. (Low) - Via the NCPN workshop on past data and research, consider fully funding a monitoring protocol for the riparian areas. (Medium) - Continue managing visitor impacts on riparian and wetlands vegetation (e.g., parking creep, off-road vehicle use, social trailing). (Low) - Implement a small block grant study on social trails in select riparian areas of the park. (Medium) - See also activities related to assessing proper functioning condition under Water Resources.
NATIVE VEGETATION—Riparian and Wetland Vegetation	N/A	The park has an improved understanding about the number and condition of springs, seeps, and tinajas.	- See the activities under water resources and wildlife related to spring inventories and aquatic invertebrates, respectively; no separate activities identified here.

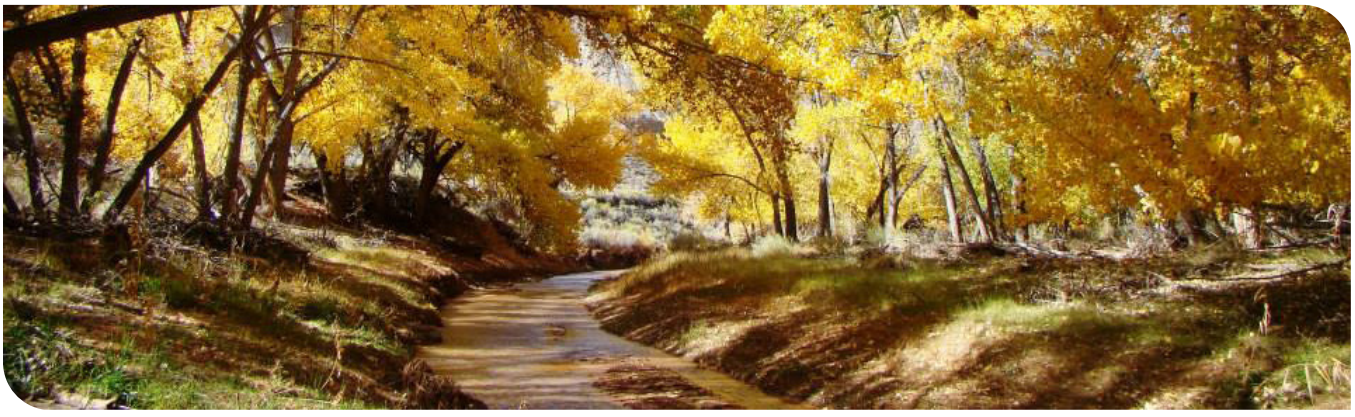


Table 3l. Stewardship Goals and Stewardship Activities for Priority Resource: Water Resources

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
WATER RESOURCES	Surface water and groundwater hydrological processes and water quality are protected, maintained, and improved as feasible through the acquisition and protection of park water rights and cross-boundary collaboration to support irrigation, park water supply, and ecosystem functioning, while managing for unavoidable change from climate change and other stressors.	The Fremont River has been rerouted into its original channel along SR 24 to alleviate significant environmental and safety concerns.	- Maintain the current SR 24 project proposal for BIL funding. (High) - Correct the existing PMIS 90817 statement for installing two bridges on SR 24 to indicate that the project has not been funded. (High) - Complete the land exchanges that were supposed to happen along SR 24 in 1961 when the agreement was signed between the NPS and the state. (High) - Complete the study of incision vulnerability of the Fremont River. (High) - Conduct a feasibility study around engineering solutions for rerouting the Fremont River into its original channel along SR 24. (Medium) - Conduct an environmental assessment for installing bridges on SR 24 and rerouting the Fremont River into its original channel. (Medium)
WATER RESOURCES	Surface water and groundwater hydrological processes and water quality are protected, maintained, and improved as feasible through the acquisition and protection of park water rights and cross-boundary collaboration to support irrigation, park water supply, and ecosystem functioning, while managing for unavoidable change from climate change and other stressors.	The park has completed the settlement agreement with the State of Utah regarding park water rights.	- Continue working through TAR with the Water Resources Division (WRD) and the solicitor's office to complete the settlement agreement with the State of Utah regarding park water rights. (High)
WATER RESOURCES	Surface water and groundwater hydrological processes and water quality are protected, maintained, and improved as feasible through the acquisition and protection of park water rights and cross-boundary collaboration to support irrigation, park water supply, and ecosystem functioning, while managing for unavoidable change from climate change and other stressors.	The park has an improved understanding of how water resources will respond to projected climatic change.	- Submit a TAR to the Climate Change Response Program to develop a proposal for a vulnerability assessment for park water resources, including potable water. (High) - Prepare a project proposal, in consultation with WRD, to develop a secondary water supply for the park. (Medium)

Table 3l. Stewardship Goals and Stewardship Activities for Priority Resource: Water Resources (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
WATER RESOURCES	Surface water and groundwater hydrological processes and water quality are protected, maintained, and improved as feasible through the acquisition and protection of park water rights and cross-boundary collaboration to support irrigation, park water supply, and ecosystem functioning, while managing for unavoidable change from climate change and other stressors.	The park has an improved understanding of surface water and groundwater (including springs, seeps, and tinajas) hydrology and water quality.	- Continue to support NCPN (and others) monitoring of water quality, streamflow, and channel geomorphology. (High) - Conduct water balance study upstream of the park in collaboration with WRD and Utah Division of Water Rights. Include Pleasant and Oak Creek drainages. (High) - Consider placement of upstream groundwater monitoring well(s). (Low) - Reach out to TAPs to understand different names over time for springs, seeps, and tinajas so that the park can identify cases in the literature in which different names refer to the same water source. This is typically done through a traditional use study with TAPs, and outcomes are entered into the CRIS-ER database (contact the regional anthropologist for support). (Low) - Submit a TAR and implement work to gather information on historic water availability and historic flow patterns (e.g., volume), particularly with regards to the Fremont River, streams, and other resources to understand historic conditions (and how they have been altered). (Low) - Conduct a workshop with NCPN to review data collection and assessments related to water resources to inform future monitoring and research needs. (High) - Complete a focused condition assessment on the status of springs, including their history, current condition, and likely vulnerability. (Medium) - Continue working with the state to monitor 303-listed waters for E. coli. (Medium) - Continue working with the state to monitor hazardous aquatic bacteria. (Medium) - Continue proper functioning condition assessments in priority drainages. (Low) - Complete a TAR with WRD to conduct a proper functioning condition assessment in Oak Creek. (High) - Continue to conduct proper functioning condition assessments in priority areas (e.g., Bitter Spring Creek). (High)

Table 3m. Stewardship Goals and Stewardship Activities for Priority Resource: Wildlife

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
WILDLIFE—General/All Components	Native wildlife species are maintained or reestablished and populations of focal species are protected or augmented as feasible under projected climatic change.	The park has a wildlife management plan that is a functional, living document that can be updated as needed.	- Develop a wildlife management plan, including specific aspects such as wildlife handling and removal. (High)
WILDLIFE—Focal Species	Native wildlife species are maintained or reestablished and populations of focal species are protected or augmented as feasible under projected climatic change.	Desert bighorn sheep habitat necessary for breeding and lambing is protected.	- Consider piloting seasonal closures, as appropriate, to limit desert bighorn sheep interactions with visitors and other disturbances during lambing season (perhaps based on a trigger, like disease outbreak or low recruitment). Incorporate as appropriate into a wildlife management plan. (Medium)
WILDLIFE—Focal Species	Native wildlife species are maintained or reestablished and populations of focal species are protected or augmented as feasible under projected climatic change.	Mexican spotted owl nesting/roosting sites are protected.	- Continue to implement closures during the breeding season in areas where the park knows there are breeding pairs of Mexican spotted owl. (High) - Incorporate strategies for protecting and maintaining Mexican spotted owl nesting/roosting sites into the wildlife management plan. (High) - Follow up on the TAR requesting help from regional biologist Kristen Philbrook to investigate and discuss current monitoring conditions for Mexican spotted owl in Oak Creek. Follow up with a potential informal consultation with USFWS. (High) - Apply USFWS protocols as needed to support the implementation of specific actions (e.g., canyoneering, trail construction) from the backcountry/wilderness management plan for consultation with USFWS. (Low)
WILDLIFE—Focal Species	Native wildlife species are maintained or reestablished and populations of focal species are protected or augmented as feasible under projected climatic change.	Habitat for focal fish species is protected and restored.	- See the activities under Water Resources related to water rights and rerouting the Fremont River; no separate activities identified here.
WILDLIFE—Focal Species	The park has an improved understanding of desert bighorn sheep population size and dynamics, range, distribution, migration, genetics, and stressors	The park has an improved understanding of *Mycoplasma ovipneumoniae (M. ovi)* prevalence in the desert bighorn sheep population, genetic strain type(s), and other stressors that may influence individual/population susceptibility to disease.	- Develop a project proposal (fund sources: Emerging Wildlife Disease, other) to understand movement of disease caused by movement sheep across the landscape, from the park all the way to Canyonlands National Park; prevalence of M. ovi in sheep populations, and stressors that may influence population susceptibility to disease (particularly related to human) to inform recreation management. (High)

Table 3m. Stewardship Goals and Stewardship Activities for Priority Resource: Wildlife (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
WILDLIFE—Focal Species	The park has an improved understanding of desert bighorn sheep population size and dynamics, range, distribution, migration, genetics, and stressors	The park has an improved understanding of the core areas of desert bighorn sheep habitat use throughout the park, including lambing areas, and movement between CARE and adjacent populations.	- See activity in row above; no separate activities identified here.
WILDLIFE—Focal Species	The park has an improved understanding of desert bighorn sheep population size and dynamics, range, distribution, migration, genetics, and stressors	The park has an improved understanding of desert bighorn sheep population size, recruitment, genetic diversity, gene flow, and structure.	- Continue the use of game camera monitoring to understand desert bighorn sheep (and other wildlife) populations and movement. (Medium) - Submit a TAR to BRD or IMD to continue to find ways to make automated processing of game camera data more efficient and to determine how to create automated reports. (Medium) - Continue and expand the partnership with institutions such as UVU and Oregon State University, conducting genetic work using desert bighorn sheep scat. (Low)
WILDLIFE—Focal Species	The park has an improved understanding of CARE Mexican spotted owl population dynamics, range, distribution, and migration.	The park has an improved understanding of whether Mexican spotted owl recovery efforts are meeting the regionwide USFWS delisting goal(s).	- Participate in a Mexican spotted owl working group to monitor them at a rangewide scale rather than a land-ownership scale. (High) - Work towards funding, through outside research funds, to conduct a telemetry/occupancy study on dispersing juveniles to understand fledgling success. (Low)
WILDLIFE—Focal Species	The park has an improved understanding of CARE Mexican spotted owl population dynamics, range, distribution, and migration.	The park has an improved understanding of Mexican spotted owl occupancy and breeding within the park that informs seasonal canyon closures.	- Continue to monitor, through passive acoustic recorders, in potential breeding habitat. Seek funding to acquire additional monitoring equipment and seek volunteers to expand the geographic scope of monitoring. Acoustic monitoring should eventually be based on a more standardized and formalized study design. (High) - Submit a TAR to BRD for assistance with developing tools for bioacoustical analysis and completing the analysis. (Medium) - Consider hosting a workshop on analyzing and automating analysis Mexican spotted owl acoustical data. (Low)
WILDLIFE—Focal Species	The park has an improved understanding of CARE Mexican spotted owl population dynamics, range, distribution, and migration.	The park has an improved understanding of Mexican spotted owl genetic connectivity and whether CARE is a source or a sink via genetics (feathers and pellets).	- Contribute feather material to ongoing genetic study (ZION and CARE). If possible, enlist the canyoneering community (e.g., collect feathers, watch protocol training video). (Medium)

Table 3m. Stewardship Goals and Stewardship Activities for Priority Resource: Wildlife (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
WILDLIFE—Focal Species	The park has an improved understanding of basic population estimates, recruitment, and the distribution of sensitive aquatic species.	The park has an improved understanding of native and nonnative fish populations and their habitats.	- Continue to support Utah Division of Wildlife Resources (DWR) surveys of conservation species of concern. (High) - Periodically request TAR with regional fish biologist (Melissa Trammell) for additional surveys within the park of additional drainages. (Medium) - Continue parkwide stream fish sampling/monitoring with the Utah Department of Natural Resources (DNR), with sampling at least every other year (ideally annually) for monitoring native and invasive species and their habitats. (Low) - Recruit researchers to conduct studies to identify habitats and water sources necessary for spawning and rearing. (Low)
WILDLIFE—Vertebrates	The park has an improved understanding of non-focal vertebrate species, including population size and dynamics, range, distribution, migration, genetics, and stressors.	The park has an improved understanding of whether certain species (turkeys, raccoons, marmots, elk, etc.) are native to the park or came to the park through introductions or range expansion over time.	- Submit a TAR to BRD, or engage external researchers, to determine whether turkeys, racoons, marmots, etc. are native to the park or have come into the park through range expansion/introduction via literature reviews, historical research, reaching out to TAPs, etc. Incorporate results into the wildlife management plan and/or integrated pest management plan as appropriate. (Low) - Submit a TAR to BRD, or engage external researchers, to determine whether bison and elk are native to the park or have come into the park through range expansion/introduction via literature reviews, historical research, reaching out to TAPs, etc. Incorporate the results into the wildlife management plan and/or integrated pest management plan as appropriate. (Medium) - Reach out to DNR to find out if they have historic records indicating that bison and/or elk were introduced to the area by a state agency. (Low)
WILDLIFE—Vertebrates	The park has an improved understanding of non-focal vertebrate species, including population size and dynamics, range, distribution, migration, genetics, and stressors	The park has an improved understanding of non-focal bird species in the park.	- Augment NCPN bird monitoring. (High) - Encourage and support the Monitoring Avian Productivity and Survivorship (MAPS) Program that is being run by UVU and the field station. (High) - Encourage and support the Utah DWR in surveying pinyon jays. (Low)

Table 3m. Stewardship Goals and Stewardship Activities for Priority Resource: Wildlife (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
WILDLIFE—Vertebrates	The park has an improved understanding of non-focal vertebrate species, including population size and dynamics, range, distribution, migration, genetics, and stressors	The park has an improved understanding of wildlife diseases that may affect non-focal vertebrate species.	- Develop a focused condition assessment or NRPP project proposal to continue white-nose syndrome monitoring for FY 2026 to FY 2028. (Medium) - Submit an Emerging Wildlife Disease proposal to survey rabbit populations in parks throughout portions of the northern Colorado Plateau (including other IMR parks such as CARE, CANY, PETR, PEFO, etc.) and to sample rabbits and hares for prevalence of rabbit hemorrhagic disease (RHDV2). (Medium) - Consider implementing internal decontamination protocols (point of contact: Kristen Philbrook) to prevent the introduction and spread of chytrid fungus. (Medium)
WILDLIFE—Invertebrates	The park has an improved understanding of basic population estimates, recruitment, and distribution of sensitive aquatic species	The park has an improved understanding of aquatic invertebrates in the park.	- Complete the aquatic invertebrate TAR; update to include spring snails. (High)

Table 3n. Stewardship Goals and Stewardship Activities for Priority Resource: Geologic Features And Processes

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
GEOLOGIC FEATURES AND PROCESSES	N/A	Geologic features and processes are preserved while minimizing human-caused degradation from visitor use, park facilities/operations, and climate change.	- Continue graffiti management, including doing cyclic maintenance in areas that have been treated. (High) - Continue to communicate with canyoneering and climbing user groups, including best practices to avoid damages to rock features. (Medium) - Develop a list of appropriate management actions to implement when thresholds are reached (e.g., closures, alterations to group sizes, bolting). (High) - Consult with Tribes to identify if there are sacred sites or other significant areas where the park should assess visitor use management. (Medium) - Continue to protect geomorphic and riparian processes per park best management practices. (Low)
GEOLOGIC FEATURES AND PROCESSES	N/A	The park has an improved understanding of rockfall hazards and monitors hazards that are risks in high visitation areas.	- Complete TAR 10764 with the Geologic Resources Division (GRD) to complete a rockfall hazard assessment, and consider necessary follow-up monitoring frequency. (Medium) - Consider developing and implementing a targeted rockfall reporting system. (Low)
GEOLOGIC FEATURES AND PROCESSES	N/A	The park has an improved understanding of damage to rock features from canyoneering and climbing and monitors over time.	- Establish a baseline condition of areas that are monitored for damage to rock features from canyoneering and climbing and establish thresholds for management. (Medium) - Continue and expand monitoring, including formalizing the understanding of the relationship between the amounts of use and the rate of damage. (Low)

Table 3o. Stewardship Goals and Stewardship Activities for Priority Resource: Paleontological Resources

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
PALEONTOLOGICAL RESOURCES	N/A	Paleontological resources are inventoried, identified, and protected from adverse impacts from visitor activities, development, park facilities/operations, and other stressors through protection, stabilization, and/or collection measures.	- Support continued inventory and data management by hiring a scientist-in-park. (High) - Follow up on TAR 21335 (paleontological resource management strategy, accepted for FY 2023), which should address how the park manages paleontological resources in situ and in its museum collection, including mitigation of impacts from projects and other threats and engagement with Tribes to better understand their ethnographic significance. (Medium) - Develop park SOPs for the management of paleontological sites. (Medium) - Work with the Western Archeological and Conservation Center (Tef Rodeffer) and WASO (Vince Santucci) to identify an approved repository for paleontological collections in coordination with the CARE custodial officer. (High) - Refine the paleontological GIS database. (Medium)
PALEONTOLOGICAL RESOURCES	N/A	The park has an improved understanding of paleontological resources in the park and their significance to the region's natural and cultural history sufficient to inform interpretation, management, and paleontology preservation.	- Host a workshop led by GRD/university staff/others to provide guidance to park staff on how to interpret and manage paleontological resources. (Low) - Explore the opportunity to create an interpretive exhibit about paleontological resources, potentially using specimens that are getting moved as a result of projects. (Medium)

Table 3p. Stewardship Goals and Stewardship Activities for Priority Resource: Wilderness

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
WILDERNESS	Wilderness character within the Capitol Reef recommended wilderness is protected and preserved while maintaining eligibility for future wilderness designation per NPS policy.	Wilderness Character Building Blocks are reviewed, updated, and implemented as appropriate.	- Enter the Wilderness Character Baseline Assessment into the interagency (or NPS specific) Wilderness Character Monitoring Database. (Medium) - Enter wilderness character measures into GIS, including creating a GIS/mapped inventory of existing structures and installations (e.g., signs, research equipment, communication installations) within wilderness; update and evaluate status annually. (Medium) - Continue wilderness character monitoring of selected indicators and measures, ensuring to document significant changes or trends at least every five years. (Medium) - Enter ongoing reported measure values into the Interagency Wilderness Character Monitoring Database every five years. (Low) - Review and validate park wilderness data in the NPS National Wilderness Stewardship Datasheet annually. (Low)
WILDERNESS	Wilderness character within the Capitol Reef recommended wilderness is protected and preserved while maintaining eligibility for future wilderness designation per NPS policy.	The park completes and implements a backcountry and wilderness stewardship plan and incorporates wilderness stewardship into park operations.	- Complete preliminary project planning (P3) for the backcountry and wilderness stewardship plan. (High) - Address P3 data gaps and other needs required before starting the backcountry and wilderness stewardship plan. (High) - Complete the backcountry and wilderness stewardship plan. (High) - Continue to conduct a minimum requirements analysis for all proposed actions that may impact wilderness character to determine if action is necessary to administer the area for the purpose of wilderness, and if so, to determine the minimum activity. (High) - Continue maintaining a park interdisciplinary backcountry committee, led by the designee of the wilderness coordinator, to review and address complex or sensitive issues, projects, and operations that may impact wilderness character. (High) - Provide annual wilderness stewardship orientation to seasonal NPS and partner staff and volunteers. (Medium) - Complete an interdisciplinary park wilderness training (i.e., unit workshop hosted by the WASO Wilderness Stewardship Division), ideally every five years. (Medium) - Ensure key staff attend the Arthur Carhart National Wilderness Training Center's (Carhart) regional wilderness stewardship training. (Medium) - Continue to coordinate with park interpretation staff to integrate wilderness information and Leave No Trace principles into interpretation, education, and outreach programs. (High) - Ensure the park superintendent attends the National Wilderness Leadership for Managers training hosted by the Arthur Carhart National Wilderness Training Center, as required per Director's Order 41, section 3.7. (High)

Table 3q. Stewardship Goals and Stewardship Activities for Priority Resource: Parkwide Resources

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
PARKWIDE RESOURCES—Wildfire	N/A	The park restores and perpetuates fire as a natural process while reducing threats to facilities and resources.	- Update the park's fire management plan. (High)
PARKWIDE RESOURCES—Managing for a Changing Climate	N/A	The park incorporates climate change considerations and the Resist-Accept-Direct (RAD) framework (and equivalent cultural resources framework) into park resource management.	- Request a "Planning for a Changing Climate" workshop facilitated by Regional Landscape Conservation and Climate Change Program staff (points of contact: Pam Benjamin and Tom Olliff). (High) - Work with USGS and NPS RAD framework staff to better incorporate social science into park resource management frameworks. (Low) - Reference the forthcoming departmental manual and chapter on indigenous knowledge for tribal perspectives on climate change, and incorporate these perspectives into park resource management strategies. (Low)
PARKWIDE RESOURCES—Philanthropy	N/A	The park expands philanthropic agreements to support resource preservation and research.	- Explore the feasibility of establishing a Capitol Reef National Park Conservancy. (Low) - Compile a list of potential contacts for philanthropic agreements and potential projects to approach them with. Develop an elevator speech and ensure that park staff understand the ethics of soliciting donations. (Medium)
PARKWIDE RESOURCES—Volunteers and Partnerships	N/A	The park increases outreach to the local community, school groups, local nonprofits, and other groups and expands opportunities for stewardship.	- Expand connections with Utah Valley University to bring students and educators into the Fruita Rural Historic District and elsewhere in the park. (Low) - Build and enhance the Youth Conservation Corp program. (Medium) - Expand the Volunteers-in-Parks program in conjunction with the Community Volunteer Ambassador program. (Medium)
PARKWIDE RESOURCES—Parkwide Roads	N/A	The park continues to maintain and improve roads to facilitate park management activities in remote areas of the park while mitigating impacts on resources from road maintenance activities.	- Collaborate with counties for steps/strategy to resolve parkwide county road downcutting. This includes steps to address compliance needs (section 7, section 106). (Medium) - Ensure that the annual maintenance agreement between the park and the counties is reviewed and updated. (High) - Continue to evaluate the climate resilience of the park's roads and trails. (Low)

Table 3q. Stewardship Goals and Stewardship Activities for Priority Resource: Parkwide Resources (continued)

PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
PARKWIDE RESOURCES—Cross-Boundary Collaboration	N/A	The park collaborates with adjacent landowners, municipalities, developers, agencies, and other stakeholders to promote cooperative conservation of resources across park boundaries.	- Collaborate with Torrey and Wayne/Garfield County businesses, landowners, and developers to minimize impacts from development to park views, skies, sounds, and other resources. (High) - Continue to address external activities and development, such as all-terrain vehicles use, four-wheel-drive trails, mining claims, and oil and gas development, that may be visible in areas along park boundaries. (High) - Continue engagement with BLM and USFS regarding ongoing and future projects (including commenting on planned projects) to minimize impacts from development to park views, skies, sounds, and other resources. (Medium) - Develop a partnership strategy/land conservation plan, including the protection of scenic views, night sky, natural sounds, air quality, and climate change as cross-boundary issues for collaboration and communicate the plan to staff. (Low) - Approach associated Tribes regarding shared interest in minimizing impacts (e.g., protecting views, night sky, soundscapes, air quality) from development and other activities (including oil and gas development) outside the park boundaries. (Low) - In partnership with stakeholders, establish voluntary best practices and/or design guidelines for adjacent landowners. (Low) - Participate in the Planning and Zoning Commission in the town of Torrey to develop zoning ordinances that maintain or improve views, skies, sounds and other resources. (Low)
PARKWIDE RESOURCES—Public Education and Outreach	N/A	The park conducts public education and outreach that convey information about the park's natural and cultural resources and major stewardship issues to enhance public knowledge, safety, and support for park resource management objectives.	- Continue and enhance communication with the public and park employees that collecting items within the park is prohibited. (Medium) - Revisit and finalize the SOPs for when visitors bring any resource (e.g., arch, geo, paleo) to the visitor center. (High) - Develop a message that can be put on the website and other online platforms and used by park staff/volunteers/interns that explains the sensitivity of resources and their location information. (Low) - Consider developing a "junior ranger" activity book targeted at adults. (Medium)

Table 3q. Stewardship Goals and Stewardship Activities for Priority Resource: Parkwide Resources (continued)

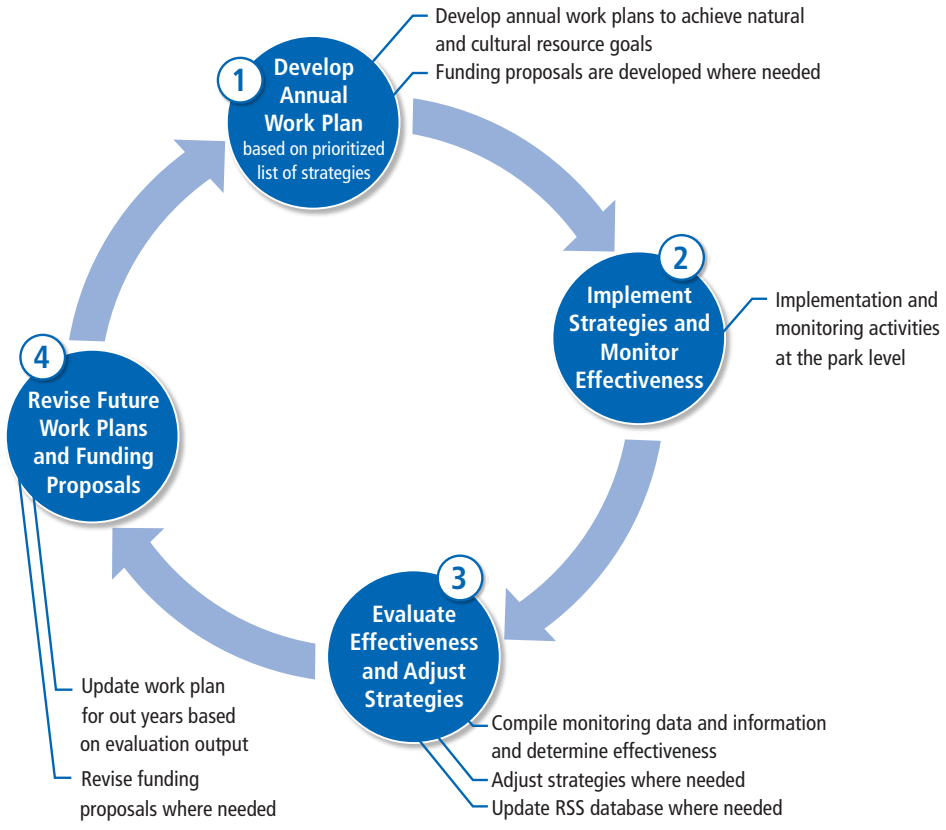
PRIORITY RESOURCE	LONG-TERM GOAL	SHORT-TERM GOAL	STEWARDSHIP ACTIVITIES (WITH PRIORITIES)
PARKWIDE RESOURCES—Compliance Actions for Park Resources	N/A	The park pursues opportunities to streamline compliance processes under the National Historic Preservation Act.	- The CARE superintendent will follow up with Utah superintendents about a statewide NPS programmatic agreement with the Utah State Historic Preservation Officer (SHPO). (High) - Initiate conversations with the Utah SHPO and regional office staff (Amy Pallante) about developing a CARE-specific parkwide programmatic agreement. (High) - Develop a compliance action, such as a park programmatic categorical exclusion, for routine park projects that are not currently covered under other streamlining instruments (e.g., orchard management, FRHD maintenance). (High)
PARKWIDE RESOURCES—Land Acquisition	N/A	The park continues to pursue acquisitions of non-NPS-owned parcels within the park boundary and land swaps for desirable parcels outside the boundary.	- Investigate the possibility of completing a land swap for the parcel just outside the park boundary that includes the "Glass Mountain" gypsum formation. (Medium) - Explore whether other land swaps along the boundary with BLM are desirable, considering existing grazing allotments, ATV management, the presence of listed species, and other factors. (Low) - See also the SR 24 land exchange activity under Water Resources.
PARKWIDE RESOURCES—Staffing	N/A	The park is prepared to justify increased resource management staffing through staff capacity analyses and the identification of critical staffing needs.	- Continue to explore options for increasing resource management staff capacity (including investigating additional fee collection options). (Medium) - Develop a park divisionwide staffing plan. (High) - Develop talking points with respect to park staffing needs for resource management, such as leveraging the park's cultural resource stewardship assessment (and other documents/ strategies) to show the contrast between the full set of agency requirements and authorized staffing to accomplish them. (Low)

ONGOING IMPLEMENTATION OF THE RESOURCE STEWARDSHIP STRATEGY

The stewardship goals, activities, and other pertinent information of the resource stewardship strategy is managed and updated as needed using the RSS desktop application. This information will assist resource managers in determining what, how, when, and where resource management occurs in the park and will assist the park's resource management staff in developing annual work plans. These work plans will be an important planning tool for park employees to determine what they will be able to realistically tackle over the coming years.

Long-term implementation of the resource stewardship strategy includes park managers monitoring resource information and conditions in order to evaluate the effectiveness of resource stewardship strategies over time. Regularly monitoring RSS progress will give park managers an opportunity to evaluate whether the stewardship activities are making progress towards identified goals and consider whether adjustments are needed. (See figure 3 for more information on the cyclical nature of this process.) In addition, routine communication with the public is another important aspect of the implementation process. These outreach efforts are intended to improve public awareness about the science and strategies used to protect the park's diverse resources and values over time.

Figure 3. RSS Implementation Process



APPENDIX A: CULTURAL RESOURCE MANAGEMENT INFORMATION

Per the park's request, the following specific information is provided for context in support of the goals and activities found in the "Stewardship Goals and Activities" section of this document, and especially in table 3d.

NOTES ON PRESERVATION TREATMENT PLANNING

Like all cultural resources, historic structures require certain baseline documents to inform management, including formal preservation treatment guidance. These needs are reflected in this RSS in the goals and activities for historic structures (table 3d). Different types of treatment guidance may suit different situations.

A historic structure report is the most thorough form of published preservation treatment guidance and includes additional elements such as a building's historical context, construction and alteration history, National Register of Historic Places eligibility analysis, and records of treatment. A historic structure report is therefore the most time-intensive and expensive form of treatment guidance to complete. Historic structure reports are strongly recommended for historic structures that remain in use (for example, as administrative space or as a curation facility).

When a lack of time or funding would make a historic structure report difficult to complete, a historic structure preservation guide is an appropriate alternative for historic structures that are not in regular use, into which people (visitors or staff) typically do not enter. A historic structure preservation guide is not as thorough as a historic structure report and consequently is less time intensive and less expensive to generate.

If a historic structure has neither of these documents but needs emergency preservation maintenance, then direct, ad hoc guidance from the regional historical architect (or a proxy) can suffice.

LIST OF CULTURAL LANDSCAPES WITHIN THE PARK

As of March 2023, the CRIS-Cultural Landscapes database lists the following cultural landscapes within the park:

- Capitol Reef National Park Landscape ("Parent Landscape")
- Fruita Rural Historic District (cultural landscape inventory/cultural landscape report completed 1997; update is in PMIS)
- Pleasant Creek Settlements (cultural landscape inventory complete)
- Oak Creek Dam
- Scenic Drive/Capitol Gorge (underway)
- Cattle ranching areas
- Mission 66 landscape (under way)
- List of Historic Structures within the Park

As of March 2023, the CRIS-Historic Structures database lists the following historic structures within the park:

- Cathedral Valley Corral
- Merin Smith Implement Shed
- Gifford House
- Lesley Morrell Line Cabin Corral
- Hickman Bridge Trail
- Scenic Drive
- Fruita Irrigation System
- Holt House
- Ranger Station (Superintendent's Office)
- Behunin Cabin, Elijah Cutler
- Lesley Morrell Line Cabin
- Gifford Smoke House
- Gifford Barn
- Oak Creek Dam
- The Post Corral
- Fruita Schoolhouse
- Pendleton Rock Walls
- Merin Smith Fruit Cellar
- Sulphur Creek Lime Kiln
- Pendelton Lime Kiln
- Civilian Conservation Corps Powder Magazine
- Oyler Mine
- Holt Fruit Cellar
- Holt House North Stone Wall
- Holt House South Stone Retaining Wall

CONTACT INFORMATION

For more information about the resource stewardship strategy for Capitol Reef National Park, contact:

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under US administration.

CARE 158/188299
June 2023

RSS

RESOURCE STEWARDSHIP STRATEGIES

NATIONAL PARK SERVICE

BRIDGING SCIENCE AND MANAGEMENT FOR TODAY AND TOMORROW