

2025 Habitat Management Plan

Upper San Rafael River WMA

Southeastern Region Habitat section



Prepared by the Utah Division of Wildlife Resources Southeastern Region



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Executive Summary

The Upper San Rafael River Wildlife Management Area (WMA) is comprised of 939 acres and is located in Castle Valley in the central part of Emery County. The property consists of two historic ranches along the banks of the San Rafael River west of the San Rafael Swell that are separated by a distance of about two and half miles. The upstream property lies about one mile above its namesake, Hambrick Bottom. It consists of 485 acres near the confluence of Huntington Creek, Cottonwood Creek, and Ferron Creek, which converge to form the San Rafael River. The BLM's Fuller Bottom road provides access to the Fuller Bottom unit of the Upper San Rafael WMA. This road intersects with the Buckhorn Wash road near the "Wedge" turn-off at Buckhorn Well, approximately five miles south of Buckhorn Reservoir. Adventurous travelers can cross the river at Fuller Bottom unit (seasonally) and continue south beyond the WMA skirting Salt Wash Canyon and the west side of the San Rafael Swell. Horseback and river travel are also common on the WMA.

PacifiCorp Energy (formerly Utah Power and Light Company, or UP&L) donated these ranches and three other properties along the San Rafael River to the Utah Division of Wildlife Resources (DWR) in 1994. DWR is mandated by the transfer agreement with PacifiCorp to retain title to this property in perpetuity. PacifiCorp maintained any coal, oil, gas, or mineral rights that were present when properties were transferred to the Utah Division of Wildlife Resources.

Each of these river bottoms were named after their original homesteaders. Tom Fuller settled at Fuller Bottom, and a relative of his, Thaddeus Hambrick, settled at Hambrick Bottom. The remains of an old log cabin exist at the Hambrick Bottom unit, and there is an old diversion at Fuller Bottom that was washed out during the floods of 1983. The WMA has only seen limited archaeological surveys over the past several decades. Two surveys from the 1970s cross the most-western parcel of the WMA. These surveys were performed before oil and gas seismic exploration and power line work.

The Upper San Rafael WMA provides habitats for mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), and potential habitat for a number of other species of interest. Ferron Creek, Cottonwood Creek and Huntington Creek converge near the Hambrick Bottom unit on the WMA to form the San Rafael River, which flows through the Fuller Bottom unit, also part of this WMA. These waters are home to three native fishes that are among species of greatest conservation need in the state of Utah: flannelmouth sucker (*Catostomus latipinnis*), bluehead sucker (*Catostomus discobolus*), and roundtail chub (*Gila robusta*), as well as federally protected Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), and bonytail (*Gila elegans*).

The DWR manages the Upper San Rafael based on the DWR's Strategic Plan (2023). Resource goal: Conserve, enhance, and actively manage Utah's protected wildlife populations, their habitats, and the water resources they rely on, using the best available science. Furthermore,

DWR's constituency goal is relevant since the public road through the property serves consumptive and non-consumptive wildlife users drawn to the area because of its scenic beauty, wildlife viewing and recreational opportunities. The Upper San Rafael provides the opportunity to strengthen support for wildlife management by demonstrating the value and importance of wildlife to all Utahans. The DWR manages these properties for fishing, hunting, and other wildlife-related activities.

BACKGROUND INFORMATION

Property Description

Location

The Upper San Rafael River Wildlife Management Area (WMA) is 938.74 acres located in the central part of Emery County, Utah (Appendix A; Map 1). The town of Castle Dale lies about 4.5 air miles from the westernmost part of the WMA. The property consists of two historic ranches along the banks of the San Rafael River west of the San Rafael Swell that are separated by a distance of about two and half miles. The upstream property lies about one mile above its namesake, Hambrick Bottom. It consists of 485 acres near the confluence of Huntington Creek, Cottonwood Creek, and Ferron Creek, which converge to form the San Rafael River (see Map 2). The average elevation of this property is 5300 feet above mean sea level.

The second parcel lies immediately west of where the San Rafael River cuts through the San Rafael Swell and is called the Fuller Bottom unit (see Map 3). It is 454 acres and is approximately 5,260 feet above mean sea level. The average annual precipitation at nearby Castle Dale is 8 inches.

Encumbrances

PacifiCorp Energy (formerly Utah Power and Light Company, or UP&L) donated these ranches and three other properties along the San Rafael River to the Utah Division of Wildlife Resources (DWR) in 1994, along with accompanying water rights and grazing permits. The transfer agreement with PacifiCorp mandates that DWR retain title to this property in perpetuity (See Appendix B).

Specifically:

- Title to the property, except for title to that part of the property located north of the San Rafael River, described as T. 20 S., R 9 E., SLB & M, Section 1: Lots 1, 2, SE 1/4 NE 1/4, shall remain with DWR in perpetuity.
- DWR will not demand PacifiCorp limit use of, or abstain from using, or release from storage, water that is owned or controlled by PacifiCorp. The DWR also will not initiate, prosecute, maintain, or voluntarily aid any action or other proceeding against PacifiCorp based on impairment of quality or quantity of the property water rights caused by PacifiCorp. The DWR will maintain the property water rights by using them to avoid forfeiture. Use of water rights will be for the benefit of wildlife, recreation or the property. Furthermore, DWR will provide annual reports to PacifiCorp indicating the use. Utah DWR agrees to evaluate and protest any new application to appropriate water

between the highest point of diversion of the property water rights and the confluence of the San Rafael River with the Green River and will take any action necessary to protect the property water rights. As needed, PacifiCorp will make available to DWR, at its expense, its records, personnel, and other expertise to defend the validity and use of the property water rights in the adjudication of the San Rafael River or in any other administrative or judicial proceeding relating to the property water rights.

Minerals

PacifiCorp maintained any coal, oil, gas, or mineral rights present when properties were transferred to DWR according to the Correction Special Warranty Deed (See Appendix C).

Easements

In 1982, at Fuller Bottom, Utah Power and Light Company conveyed a perpetual exclusive access easement across portions of lots 1 and 2 in Township 20 South, Range 9 East, and Section 1 to the USA. The easement allows recreationists and the public to access the San Rafael River for float trips. Horse trails up and down the river also begin here.

Fuller Bottom road dissects the Fuller Bottom ranch in a north-south direction. Fuller Bottom road is a class D roadway and has no designated maintenance. Emery County and the BLM (Bureau of Land Management) have a verbal agreement that allows Emery County to maintain the road. However, there is no formal agreement or guarantee in place. There are no roads accessing the Hambrick Bottom unit. A road leaving the county road crosses private land and provides access less than one-half mile of the Hambrick Bottom unit. The legal status of this access road is not known, but historic use may suggest a prescriptive right-of-way.

Grazing

Grazing is addressed here as an encumbrance due to the nature of the WMA in relation to the surrounding BLM lands. Both properties (Hambrick and Fuller Bottom) consist primarily of 40-acre parcels lining the flood plain of Ferron Creek, Cottonwood Creek, and the San Rafael River. These small, scattered parcels are surrounded mainly by BLM and State Trust Lands included in grazing allotments. There are four BLM grazing allotments that border the WMA. Without fencing and fence maintenance, trespass cattle grazing is difficult to control. Emery County is a “fence out” county, meaning it is the property owner’s responsibility to maintain fencing to keep livestock out.

At the Fuller Bottom unit efforts have previously been made to fence it in its entirety to exclude grazing from surrounding BLM livestock grazing permits. This has proven ineffective due to river crossings and sedimentation making the fence non-operational. A new grazing plan has

been proposed to combine the Fuller Bottom property with the adjacent Trust Lands parcel and manage grazing of both properties in conjunction.

Hambrick Bottom unit has not been fenced. Currently, DWR leases 14 AUMs (Animal Unit Months) of grazing at the Hambrick Bottom unit to a neighboring landowner for incidental grazing due to the inability to fence the property effectively.

Land Acquisition History

UP&L purchased the Hambrick Bottom property in the early 1980's and the Fuller Bottom property in March, 1980. Both properties were transferred to DWR by PacifiCorp in June 1994. The ranches were purchased for their water rights at the time of the construction of the Hunter Power Plant and were later donated to DWR, which is able to maintain the water rights under an instream flow. These properties and three additional ranches downstream, along with water rights and grazing permits, were all donated to DWR. During the exchange, grazing permits from the Dugout, Jeffery Well, Iron Wash, and Sweetwater BLM grazing allotments were sold or traded, and the money was put into an account for the future management of the property, which is to remain in DWR ownership in perpetuity (See Appendix D). Soon after that, DWR applied for and received a change application from the State Engineer, which changed all associated water rights to an instream flow with the option of irrigation if preferred (See Appendix E).

Historical Background and Cultural Resources

The Spanish Trail is a nineteenth-century trade route that connected Santa Fe to Los Angeles and was traveled extensively by early Spanish traders and explorers, Native Americans, and pioneers. From 1829 to 1848, the 1,120-mile trail skirted the north side of the San Rafael Swell and crossed Ferron Creek in the vicinity of the Hambrick Bottom unit. The trail may have crossed land that is now part of this WMA or very near it.

The remains of an old log cabin exists at Hambrick Bottom unit and there is an old diversion at Fuller Bottom unit that was washed out during the floods of 1983.

Each of these river bottoms were named after their original homesteaders. Tom Fuller settled at Fuller Bottom, and a relative of his, Thaddeus Hambrick, settled Hambrick Bottom. Since that time, each property has been irrigated and farmed from time to time. Prior to DWR ownership, cattle forage had been created by irrigating the floodplain during the summer months. At Hambrick Bottom, a pump and sprinkler system irrigated approximately 88 acres of pasture. It is estimated that 179 acres were under irrigation at Fuller Bottom prior to the historic flood of 1983, which destroyed the diversion dam.

Limited archaeological surveys over the past several decades have occurred on the WMA. Two surveys from the 1970s cross the most-western parcel of the WMA. These surveys were performed before oil and gas seismic exploration and power line work.

In the Fuller Bottom unit, DWR completed an in-house archaeological survey in advance of the proposed construction of a small pond for brooding chub and sucker fish. This survey resulted in the documentation of the only previously recorded archaeological site on the WMA, a short section of highly eroded historic irrigation ditch. The ditch likely dates back to the late 1800s or early 1900s and is associated with early agricultural efforts at the WMA. This site was determined not eligible for the National Register.

In 2022, another archaeological survey was completed by an outside archaeological consultant working on a proposed film production (Horizon Films) to be primarily located on BLM land. While this survey effort identified several archaeological sites, none were on the WMA. The survey effort on WMA focused on an access corridor through the WMA for film production.

While only one previously recorded site (the previously mentioned historic ditch) is documented within the boundary of the WMA, the surrounding area on BLM and private land holds numerous historic and prehistoric archaeological sites. These sites range from prehistoric rock art, prehistoric artifact scatter and historic artifact scatters. Future archaeological survey efforts on the WMA would likely result in finding additional sites both prehistoric and historic. Given the number of nearby previously recorded sites, it is presumed the WMA has a moderately high density of archaeological sites. The general area has a long history of prehistoric and historic occupations, largely focused on the water provided by the San Rafael River and other nearby resources.

Purpose of DWR Ownership

DWR accepted this donation due to the inherent fish and wildlife value associated with the five San Rafael properties and their associated recreation and hunter access values. DWR ownership can also protect the water rights from forfeiture or abandonment with instream flow rights, which will also prove beneficial to indigenous fishes of the San Rafael River, some of which are federally listed as threatened or endangered and protected under the Endangered Species Act of 1973.

However, the two ranches that make up this WMA are upstream of the irrigation water diversion dam at Hatt Ranch, which has been and continues to be an impassable barrier to fish coming upstream from the Green River and Lower San Rafael River. Another diversion dam at the “Frenchman’s” property was presumably an effective fish barrier until it washed out in 1983. The dam has never been restored. The native fish that live in the river above these barriers are the key benefactors of this WMA. Three native fish species are included on Utah’s List of

Greatest Conservation Need due to their limited distribution, declining numbers and waning habitat. These species are the flannelmouth sucker bluehead sucker) and the roundtail chub. During a review of the San Rafael River, a majority of the suitable habitat for the three species was within the upper section above Hatt ranch, which included Fuller Bottom (Laub 2013).

Key terrestrial species that use the WMA include mule deer (*Odocoileus hemionus*), wild turkey (*Melagris gallopavo*), ring-necked pheasant (*Phasianus colchicus*) (planted), American beaver (*Castor canadensis*), desert cottontail (*Sylvilagus audubonii*), a variety of waterfowl and perhaps an occasional pronghorn antelope (*Antilocapra americana*), California quail (*Callipepla californica*), or mourning dove (*Zenaida macroura*), Peregrine falcon (*Falco peregrinus*), kit fox (*Vulpes macrotis*), and bat species are also known to inhabit the deserts of the San Rafael Swell. A thriving herd of Desert bighorn sheep (*Ovis canadensis nelsonii*) live nearby on the Swell but have never been known to visit the WMA.

Recreation opportunities that exist on this WMA are hunting, horseback riding/packing, river running and riding All-Terrain Vehicles (ATV) through the WMA on the BLM access road. After crossing the WMA, this road continues to the southwest, skirting North Salt Wash and Horn Silver Gulch on the west side of the San Rafael Swell. Floating the river through the San Rafael River Gorge is popular when flows are sufficient. The WMA is the starting point for this 15 mile float trip of which the first 1.5 miles is mostly on the WMA.

Conservation Partners Involved in Acquisition

Rocky Mountain Power, formerly PacifiCorp Energy, donated this property to DWR.

PROPERTY INVENTORY

Existing Capital Improvements

Roads

There are no roads on the Hambrick Bottom unit. A BLM road dissects the Fuller Bottom unit and provides access to the property and to the river for recreationists. Just south of the river, this road forks, but each fork soon leaves the WMA. No other roads exist on the WMA.

Fences

While the Hambrick Bottom unit is mostly unfenced, the Fuller Bottom unit has a perimeter fence that was in fair condition at the time the property was appraised in 1991. DWR installed a cattle guard on the north boundary of the Fuller Bottom road where the road crosses onto the

property (year unknown). Two additional cattle guards were installed on the south end and the east side of the property in coordination with the BLM in the fall of 2021.

Facilities and Equipment

At the Hambrick Bottom unit, there are the remains of an old cabin. No other facilities exist on either property. Sprinkler irrigation equipment which was transferred to DWR along with the property is no longer used.

Water Rights

Water rights associated with the Hambrick Bottom tract include two certified rights on Ferron and Cottonwood Creeks for a total of 1.973 cfs, with priority dates of 1973. The combined rights allow irrigation of 119.58 acres, although 151.92 acres may be irrigated, as determined by the State Engineer in issuing Water Certificates numbers 11095 and 11096. There are also three water rights associated with this property for point to point stock watering. These three water rights have a priority of 1875 and are used for supplemental stock watering of 210 livestock.

One water right with priority dates of 1959 is associated with the Fuller Bottom unit. The certificate allows for the diversion of up to 5.0 cfs of San Rafael River water to irrigate a maximum of 179.10 acres. There are also two additional well water rights that have been filed and approved on this property. The first well is under a fixed time application for 6.2818 acre-feet for the use of fish culture in a pond. The second well is for 4.73 acre-feet for stockwatering of 168.93 livestock.

In addition to the river water, UP&L drilled several test wells on and near this ranch in the early 1980's seeking sources of emergency cooling water for the Hunter Power Plant. Some of the wells were intended for production, while the other three were drilled for observation. One of the production wells located in the SE1/4NE1/4 of Section 1 has artesian flow. This well has been cased and capped but has the capability of producing an artesian flow of 20 gallons per minute (gpm) with sustained pumping flow of approximately 100 gpm. Applications for use of this ground water have been filed with the State Engineer by UP&L.

Table 1. Summary of Water Rights associated with the Upper San Rafael WMA.

Number	Source	Priority Date	Quantity (cfs)	Irrig. Acres	Stock Water
93-452 (11096)	Ferron Creek	1973	0.873	64.00	200 C, 10 H
93-463 (11095)	Cottonwood Cr	1973	1.100	55.58*	200 C, 10 H
93-1054 (7741)	San Rafael River	1959	5.000	179.10	
93-1285	Cottonwood Cr	1875			Supp 210 Stock

93-3194	Cottonwood Cr	1875			Supp 210 Stock
93-3196 (A56208)	Water Well	1981	4.73 acre-feet		169.93 Stock
93-3514	Cottonwood and Huntington Cr	1875			Supp 210 Stock
93-3774 (F80081)	Water Well	2014	6.2818 acre-feet		Fish Culture and Pond

In 1993 there was a change application filed (93-340 a17629) by DWR and approved by the State Engineer on February 24, 1995. The change application proposed to change several water rights points of diversion, place of use and nature of use of the water. The change application was to move the water right to instream flow, The instream flow was approved for different flows on Cottonwood Creek, Ferron Creek and the San Rafael River. Under this management plan water right 93-452 is for 0.873 cfs (256.45 acre-feet) on Ferron Creek to Fuller's Bottom. 93-463 is for 1.100 cfs (222.77 acre-feet) on Cottonwood Creek to Fuller's Bottom. 93-1054 is for 5.00 cfs (716.00 acre-feet) from Fuller's Bottom to Hatt Ranch. Also under the approval of this change application (a17629) and stipulation any water that is diverted for traditional uses, i.e. irrigation and stock watering, will need to be subtracted from the water that is available within a specific stream reach using the particular point of diversion as its beginning point.

Species of Greatest Conservation Need

Utah Wildlife Action Plan

The Utah Wildlife Action Plan was developed and written by a broad-based team of diverse stakeholders, non-governmental organizations (NGO's), and other governmental agencies. The Utah Division of Wildlife Resources (DWR) compiled and edited the plan; however, it is not solely a DWR product. Among other things, the wildlife action plan identifies imperiled native wildlife species and ranks their status according to conservation need. The wildlife action plan provides a summary of the "distribution and abundance" information on the SGCNs identified. Specifically, the plan presents state and national NatureServe ranks, which provide an integrated, weighted index of rarity, trends, and threats, with rarity (the inverse of "abundance") assigned most of the weight. Besides these ranks, more Utah Specific information about rarity, trends, and distribution are presented in the plan. Refer to the [Wildlife Action Plan](#) for detailed explanation of levels and ranks.

The Upper San Rafael WMA provides habitats for fish species of greatest conservation need, mule deer, and potential habitat for a number of other species of greatest conservation need and federally listed species including yellow-billed cuckoo (*Coccyzus americanus*), northern leopard

frog (*Lithobates pipiens*), golden eagle (*Aquila chrysaetos*), Lewis's woodpecker (*Melanerpes lewis*), southwestern willow flycatcher (*Empidonax traillii extimus*) (taxonomy undecided), midget-faded rattlesnake (*Crotalus oreganus concolor*), fringed myotis (*Myotis thysanodes*), long-eared myotis (*Myotis evotis*), spotted bat (*Euderma maculatum*), Townsend's big-eared bat (*Cornorhinus townsendii*), yuma myotis (*Myotis yumanensis*), peregrine falcon (*Falco peregrinus*), and perhaps other reptiles, amphibians, or bats.

Ferron Creek, Cottonwood Creek and Huntington Creek all converge near the Hambrick Bottom unit on the WMA to form the San Rafael River which then flows through the Fuller Bottom unit, also part of this WMA. These waters are home to three native fishes that are among species of greatest conservation need in the state of Utah. The states three-tiered system of species of greatest conservation need lists the flannemouth sucker the bluehead sucker and the roundtail chub as Tier I species. Although federally protected Colorado pikeminnow, razorback sucker, and bonytail chub are known to occur in the lower San Rafael River, the historical importance of the upper stretches of the river to these species may never be known due to large diversions reducing suitable habitat and creating barriers to upstream migrations. It is believed that the upper reaches of these waters were used as spawning grounds for some of these fish, which migrated downstream to the Green and Colorado Rivers after spawning. Bluehead suckers, flannemouth suckers and roundtail chubs being less migratory, have remained in the upper reaches of the river above the Hatt Ranch diversion. Studies by Utah State University have shown significant outmigration of juvenile flannemouth suckers downstream at Hatt Ranch, presumably the result of spawning in the upper river.

Although the Hatt Ranch diversion has limited the upstream migration of native fishes into the Upper San Rafael River, it has also limited and minimized the movement of non-native fish species. Channel catfish (*Ictalurus punctatus*), common carp (*Cyprinus carpio*), bullhead (*ameiurus*), green sunfish (*Lepomis cyanellus*), and sand shiners (*Notropis stramineus*) are some of the largest invaders in the lower San Rafael River displacing native fishes. The largest concern and need for native fishes in the WMA is sustained flows. Therefore DWR has made no effort to reestablish diversions that were washed out in 1983 and has changed the water rights to instream flow. There is suitable habitat for native fishes when adequate flows are available through the WMA.

Important Fish and Wildlife Habitats

Habitats are also described in the Wildlife Action Plan and are assessed for their importance to native wildlife species. The plan identifies five habitat types that apply to the Upper San Rafael WMA, namely Lowland Riparian, Wet Meadow, High Desert Scrub, Lotic Water, and Cliff. Three of these (Lowland Riparian, Wet Meadow and Lotic Water) are identified as "key" habitats, meaning they are high priority habitats which are in need of conservation.

The Upper San Rafael WMA provides important habitat for the three sensitive fish species mentioned above, namely the flannelmouth and bluehead suckers and the roundtail chub. Providing and protecting habitat for these native fish is a primary focus of this WMA. Terrestrial wildlife also benefit from riparian and upland habitat that exists along the creeks flowing through the WMA. These desert streams provide a valuable water source and riparian sanctuary for many different terrestrial and amphibian species. The surrounding area is a semi-arid, cold desert, with sparse shadscale/greasewood vegetation.

General Conditions of Habitat

Habitat Limitations

Aquatic

The aquatic habitat conditions in the WMA are dictated by flows from Cottonwood, Ferron and Huntington Creeks. Before settlement, these creeks had high spring runoff which would peak in late spring to early summer around late May or early June. Random occurrences of late summer monsoonal storms also put the creeks at potentially high flood stages for shorter durations of time during the months of August, September, and October. Since settlement, reservoirs have been built to collect and store winter and spring flows for water use later in the irrigation season (June, July, August, and September) reducing spring flows and magnitude. Late summer monsoonal moisture falls in the valley below most of the reservoirs and continues to flood dry washes and perennial streams.

Early irrigation systems depended on flood irrigation as the primary method of irrigating fields. Flood irrigation can result in increased salinity in streams as return flows from fields can transport the salt and minerals back to the river. Emery County has converted largely to sprinkler irrigation which has resulted in a reduction salinity being added to the river. One benefit of flood irrigation was the return of excess flow through washes back to the river. The switch to sprinkler irrigation has widened the watering footprint and reduced return flows to the river. It is still unknown what the change in water efficiency will have on the San Rafael River. Stream dewatering highly impacts the availability of instream habitat for native fishes. Channelization of the stream and the lack of backwater habitats also limit aquatic resources. Reduced flows results in stream channelization and reduced backwater habitat needed for aquatic organisms. The San Rafael River through the WMA is and has been disconnected from the floodplain reducing inputs in the stream and the creation of habitats. Pool and riffle habitats in the stream are unknown but may be a limiting factor for fish.

The San Rafael River watershed is a flashy system and due to disconnect from the floodplain the river can produce strong flows that could influence the lifespan of stream restoration efforts such as low-tech based restoration tools including beaver dam analog structures (BDA's). Low-tech

based restoration efforts have helped create instream habitat at base flows. Beavers have been present in the WMA and the creation of natural beaver dams have generated complex habitat favorable to native fishes. Additionally, a pond on the property has been considered for a roundtail chub nursery, however habitat in the pond may be limited by temperature and oxygen. An aerator may be needed to make it a functional nursery.

The presence of natural beaver dams on the river is improving stream habitat including pools and riffles. The bentonite in the pond is also maintaining some water throughout the year and should be maintained.

Terrestrial

The riparian habitat in the bottom of this desert canyon draws terrestrial wildlife. The topography creates habitat for numerous avian and terrestrial species. Much of the canyon floor is riparian or wetland with surrounding uplands. The WMA provides habitat for a variety of small mammals, birds, and presumably reptiles and a few mule deer and an occasional pronghorn antelope. Perhaps the primary habitat limitation is livestock grazing on the riparian vegetation. Terrestrial habitats are limited because the adjacent riparian uplands are disconnected from the river and the historic active floodplain has been lost. The property is further limited by a lack of seed producing shrubs and mid-canopy vegetation in the cottonwood stands. The expansion of the willow community and other desired vegetation may be inhibited by uncontrolled livestock grazing, particularly during parts of the year during critical growth cycles. Tamarisk (*Tamarix ramosissima*) invasion on uplands continues to be a maintenance challenge. Russian olive (*Elaeagnus angustifolia*) currently exists on the property and should be monitored for increasing density.

Monarch butterflies (*Danaus plexippus*) have been observed using the rabbitbrush (*Ericameria nauseosa*) on the property. Rocky Mountain beeplant (*Cleome serrulata*) near the pond is also an important forb for pollinators and wildlife. There are signs of cottonwood (*Populus spp.*) regeneration. Cottonwood snags also provide important wildlife habitats. Russian olive is currently sparse on the WMA and is providing some mid-canopy and seed/fruit source for birds. There are pockets of heterogeneity on the WMA that should be expanded. Willow (*Salix spp.*) stands exist on the property. There are healthy stands of sand dropseed (*Sporobolus cryptandrus*), alkali sacaton (*Sporobolus airoides*), and inland salt grass (*Distichlis spicata*).

Habitat Threats

The Wildlife Action Plan lists specific threats to key habitats throughout Utah. The following specific threats may apply to the three key habitats identified in the Upper San Rafael WMA- Lowland Riparian, Wet Meadow and Lotic Water.

Development:

- Unauthorized road and recreational development will impact habitat
- Unauthorized roads have been created within the WMA. As the San Rafael River changes course, roads are altered and new user-created paths emerge.

Drought:

- Recent prolonged period of significantly below average precipitation
- Drought in these desert ecosystems influence river flows and vegetation. Drought can lead to dewatering of streams and increased water temperatures. Non-native vegetation such as tamarisk, or Russian thistle tends to outcompete native vegetation.
- Drought can lead to river incision and homogenize river habitat suitable for native fishes.

Energy Development:

- Construction of well pads, power lines, roads, and other structures associated with oil/natural gas extraction or coal mining

Fire Cycle Alteration:

- Fire frequency and intensity can increase if certain invasive non-native species dominate an area
- Tamarisk is dense in some areas on the WMA. Biocontrol methods reduce the plants vigor, however, fuels still remain high. Risk of fire is increased with human-activities. Flammable non-native vegetation can spread fire rapidly within the riparian corridor.

Improper Grazing Practices:

- Overgrazing by livestock, wildlife, or wild horses, grazing during sensitive periods, grazing without periods of rest or deferment.
- Due to the checkerboard nature of the WMA, the convergence of multiple allotments, natural features influencing livestock trailing, and the access to quality vegetation and water along the San Rafael River, livestock grazing presents challenges for WMA management. Timing and intensity of improper grazing may negatively influence desirable vegetation including native grasses and forbs and woody vegetation like willows.

Improper OHV Use:

- Negative impacts from off-highway vehicles used off of designated roads and trails; includes illegal trail pioneering and proliferation
- OHV use is increasing in the San Rafael desert and new user-created trails have been created on the WMA. This is especially problematic when the stream crossing becomes impassable and users are looking for alternate routes. OHV use also occurs in administrative use only-areas.

Invasive Animal Species:

- Invasive carp, black bullhead, green sunfish, and varieties of shiners increase degradation of aquatic habitat and compete with native fishes, negatively affecting native fish survival, water and habitat quality. Invasive mollusk species of quagga and zebra mussels are a growing concern with increased watersport usage at the WMA. Invasion by carp or certain aquatic mollusks, resulting in altered aquatic habitats
- Invasive Plant Species: invasion by cheat grass, tamarisk, noxious weeds, or other undesirable non-native plant species
- Invasive or noxious weeds found on the WMA include tamarisk, Russian olive, and Russian thistle

Nutrient Enrichment:

- Eutrophication of water habitats due to excess nitrogen, phosphorus, and/or other nutrients; includes sediment loading increased inorganic soil materials suspended in the water

Water Development:

- Altering natural water flows through diversion, storage, pumping, and/or conveyance activities.

Human Use Related Problems

The unfeasibility of controlling livestock grazing on the Hambrick Bottom unit has made management difficult. Livestock grazing on Fuller Bottom unit is more easily managed, but has also been a frequent problem. Most of the WMA is surrounded by public BLM lands with existing livestock grazing allotments. Maintaining fencing infrastructure is difficult and has led to livestock entering the WMA to access water and forage. Perimeter fencing exists, however the condition of the fence in conjunction with gates being left down and wires being cut leads to cattle accessing the property. This is a trespass situation and DWR is working on a long-term solution with adjacent permittees.

The BLM maintains a recreation easement for access to the San Rafael River at the Fuller Bottom unit on DWR property. River runners access the river here for float trips down the San Rafael River to the bridge at Buckhorn Wash. While river-runner traffic is seasonal, there may be occasional conflicts with WMA management from time to time. Conflicts may be increased with stream restoration activities such as the installation of BDA structures and their exposure with varying water levels. ATV and OHV traffic crossing the WMA on the BLM road at the Fuller Bottom unit has increased, and may create management issues in the future. Mountain biking is also a quickly expanding sport in the state. The WMA will need to be monitored for the creation of unauthorized mountain bike trails.

In the early 2020's, the property was used as part of a production film. Filmography, use of drones, and other types of photography, especially for financial gain, are subject the R657-28 Use of Division lands. These activities will be highly scrutinized in future requests.

Adjacent Land Uses and Potential Impacts

Cottonwood Creek downstream to the San Rafael River is the border between two different BLM grazing allotments. Hambrick Bottom grazing allotment is to the south, and the Red Seeps grazing allotment is to the north. The Fuller Bottom unit is similarly flanked by the Fuller Bottom and Buckhorn grazing allotments, with the river being the boundary. Each of these allotments has multiple permittees who graze cattle during the winter and spring months. While much of the Fuller Bottom unit is fenced to exclude cattle use, that is not the case for Hambrick Bottom unit. Cattle grazing during the winter and spring months will likely continue on this part of the WMA because it's unfeasible to fence due to terrain and being isolated. Some private land borders the Hambrick Bottom unit and it is mostly used for livestock grazing. In addition to the current lease, other nearby private landowners have expressed interest in leasing the Hambrick Bottom unit in the past, since it is convenient to their own property.

The WMA is encompassed within the San Rafael Recreation Area, created in 2019 as part of the John D. Dingell Jr. Conservation Management and Recreation Act. This recreation area promotes recreation experiences including hiking, biking, four-wheel driving, horseback riding, canyoneering, and river running. Recently, interest in and use of the WMA for these purposes has increased. The Dingell Act also created congressionally designated wilderness nearby. The easternmost 40 acre parcel at the Fuller Bottom unit is bordered on two sides by the Sids Mountain BLM wilderness area.

MANAGEMENT GOALS AND OBJECTIVES

The acquisition and management of this property is consistent with the resource goal outlined in DWR's Strategic Plan (2023) which follows:

Resource goal: Conserve, enhance and actively manage Utah's protected wildlife populations, their habitats and the water resources they rely on, using the best available science.

Objective 1: Increase, decrease or maintain wildlife populations, as needed, to meet the objectives in our management plans.

Objective 2: Maintain existing wildlife habitat and increase the quality of critical habitats and watersheds throughout the state.

Objective 4: Decrease risks to species and their habitats through integrated implementation of the Wildlife Action Plan, species recovery plans, conservation agreements and other management plans (species, AIS, disease, etc.).

Objective 5: Conduct management work to help prevent species of concern from being federally listed as threatened or endangered, and work to delist those species that are currently listed.

Furthermore, DWR's constituency goal has relevance since the public road through the property serves consumptive and non-consumptive wildlife users who are drawn to the area because of its scenic beauty, wildlife viewing and recreational opportunities. Constituency goals outlined in DWR's Strategic Plan are as follows:

Constituency goal: Strengthen support for wildlife management by demonstrating the value and importance of wildlife to all Utahans.

Objective 1: Increase opportunities for and participation in fishing, hunting and other wildlife-related activities.

The Upper San Rafael WMA will be managed to increase its functionality, appeal, availability and use by all fish and wildlife species. Habitat management will be consistent with sound ecological principles and wise land use practices. Access to the river for river runners and other recreationists will continue. In addition to protecting aquatic resources, the property is also managed for upland game opportunities.

STRATEGIES FOR PROPERTY MANAGEMENT

Development Activities

Establish Property Boundary/Fence

The Hambrick Bottom unit would be difficult and costly to survey professionally or fence due to the checker-board nature of the parcels, the surrounding terrain and the sinuosity of Ferron and Cottonwood Creeks. Historically, drift fences were erected across the canyon and topographic features like ledges, rocks and creek banks were used to exclude livestock. Upon settlement, river bottoms were hard to survey accurately and many old homesteads like this one were originally assumed to contain the entire river bottom area. However, when mapped out on paper, they show large areas of public land that have been included in the farm-stead. Similarly, large parts of upland hilltops are sometimes private but have never been integral to the farming operations. While this same situation applies to the Fuller Bottom unit, it is not nearly as severe. Much of the Fuller Bottom unit is already fenced.

Sign Needs

Signs identify the WMA where the BLM road enters onto the northern boundary of the property at the Fuller Bottom unit. Signs explaining camping rules (i.e., no camping) pack it in, pack it out and other messages about management of the WMA should be placed at the north border which is considered to be the main entrance. Another sign should be placed at the south boundary along this same road to identify the southern boundary of the WMA. A sign along the river at the east boundary would help river runners know when they are no longer on the WMA. Small boundary signs could be placed along the borders of the Hambrick Bottom unit on the up and down river sides of the property to identify the WMA to any who might enter while walking or riding up or down Ferron, Cottonwood or Huntington Creeks. There are no roads that enter the borders of the Hambrick Bottom unit.

Public Access

The BLM's Fuller Bottom road provides access to the Fuller Bottom unit of the Upper San Rafael WMA. This road intersects with the Buckhorn Wash road near the "Wedge" turn-off at Buckhorn Well approximately five miles south of Buckhorn Reservoir. Adventurous travelers can cross the river at Fuller Bottom (seasonally) and continue south beyond the WMA skirting Salt Wash Canyon and the west side of the San Rafael Swell. The river road crossing at the Fuller Bottom unit is impassable during many times of the year. The road is currently being eroded by the river on the northern end of the property just past the first cattle guard.

There are no roads into the Hambrick Bottom unit. The best way to get to the property is southeast out of Castle Dale for approximately 4.5 miles along a series of dirt roads that dead-end on the point between Rock Canyon Creek and Cottonwood Creek. From this outlook you can see part of the WMA in the distance. Near here (on the east side) is a road that drops off into Cottonwood Creek on private land. Taking this road and driving as far as possible will get you within 0.25 to 0.50 mile of the northern-most parcel of the Hambrick Bottom unit. Legal access along this last part of the road through private land is not known, but historic use would suggest a prescriptive right of way, at least for administrative access. The maps show an old jeep trail accessing the Hambrick Bottom unit near the confluence of Ferron Creek and Huntington Creek, but this road is no longer accessible with an automobile.

Camping is not allowed on the WMA, and there is no trash collection, restrooms, potable water or fire pits on site. Horseback travel is also allowed on the WMA

ATV and OHV traffic is not allowed on the WMA except on the county road that dissects the Fuller Bottom unit. Efforts have been made to close off washes to vehicle traffic to prevent damage to habitat and reduce confusion about boat put-in locations.

Annual Maintenance Activities

Maintenance on the following will be completed as needed:

- Fence
- Road
- Cattle guard
- Parking Area
- Noxious Weed
- Sign Replacement

Noxious Weed Control

DWR personnel will spray and control noxious weeds on the WMA as required by state law. Care will be taken to limit opportunities for noxious weed introduction and any hay used by visitors, hunters or livestock owners must be certified weed free. Noxious and annual weed control includes tamarisk, Russian olive, annual kochia, and Russian thistle.

Additional Maintenance Needs

- USGS gauge long-term funding plan
- Spring well-head replacement

Compatibility of Proposed Uses with Local Government Planning and Zoning Ordinances

The entire WMA falls under Emery County Zoning regulations as: Mining, Grazing and Recreation (MG&R-1) Zone.

Emery County Zoning Ordinance states the following:

Declaration of Legislative Intent

The MG&R-1 Mining, Grazing, and Recreation zone generally covers the Dry Mountain and desert areas of the County. Because of the limitations imposed by climate, topography, soil capability, inadequate water supply, and the presence of economically significant mineral deposits, this area has historically been utilized as a place for the grazing of livestock on the open range and as the location of numerous mining and mineral exploration sites. The peculiar characteristics and conditions present in this area make the land most appropriately suited for a continuation of these uses. However, because of the relatively fragile balance of nature in the area, all permitted activities must be carried out in a manner consistent with the limitations of the environment as identified in the [Emery County Management Plan](#).

DWR's proposed management of the Upper San Rafael WMA is entirely compatible with Emery County's Zoning Ordinance designation.

STRATEGIES FOR HABITAT MANAGEMENT

Herd Unit Management Plans

Deer Herd Unit Management Plan for Deer Herd Unit 12 (San Rafael), 2018

The management plan does not set a target objective mule deer for this unit, setting management objectives for the San Rafael portion of the unit and obtaining sex-ratios would be unreliable due to small and isolated deer herds resulting in inadequate sample sizes. The majority of deer numbers are concentrated in the unit where there are agricultural corridors. Deer numbers along these corridors are not declining and provide local hunters hunting opportunities.

Habitat – Minimal year-round habitat exists for deer on this unit and the majority of deer are on private land.

- Crop Depredation – kept to a minimum as prescribed by law regardless of herd objectives.
- Highway Mortality

Habitat management objectives are described as:

- Maintain or improve mule deer habitat on the unit by protecting, maintaining, and enhancing existing crucial habitats and mitigating losses due to natural and human impacts.

Most of the WMA lies within the “substantial” zone for mule deer winter range, which means it is of secondary value but is important, especially during extreme winters.

State-wide Pronghorn Management Plan (2017) sets a target objective for Herd Unit #12 (San Rafael North) of 1200 total pronghorn on this unit with 810 estimated individuals in 2022.

Limiting factors are identified as:

- Habitat
- Depredation loss
- Landscape fragmentation (e.g., oil well pad placement, roads, pipelines, energy development)
- Drought

Habitat management strategies are described as:

- Water development – construct guzzlers and ponds to distribute pronghorn over larger areas.

- Vegetation management – support and encourage improved livestock grazing practices and season of use in an effort to improve the range for pronghorn and livestock.

There are a few elk on the Cedar Mountain Wildlife Management Unit, but the elk management objective is zero, and there are no known occurrences of elk using the WMA.

Habitat Improvement Plan

To improve terrestrial and aquatic habitat on the Fuller Bottom unit, the DWR is planning on fencing parts of it and controlling livestock grazing through permitted use in partnership with Trust Lands. Exclusionary fencing the entire property would be difficult due to the shape of the parcels, the terrain of the surrounding area, and the number of stream crossings that would be required across creeks that swell to many times their normal size during late summer flood events. The benefit of fencing would be very low as the WMA has little potential for increasing terrestrial wildlife abundance, while the cost would be very high. If there were opportunities to acquire bordering properties this could help block up the WMA and make it more contiguous, which would greatly diminish the need for fencing and make the existing land more useful to wildlife.

Targeted removal of tamarisk and Russian olive has occurred on the WMA in the past, and will be continued. Future removal is planned with mechanical equipment to remove and stack the material on site. The material should be stacked in a way that provides immediate cover for upland game and other wildlife. Once sufficient other mid-level canopy species are established, thriving plans will be made to address this material either through chipping or burning. Plans are in place to plant trees and shrubs as a revegetation effort following invasive species removal. These trees and shrubs will help suppress weedy species while providing food and cover for various wildlife species.

The Fuller Bottom unit was chosen as a Chinese Leaf Beetle (*Diorhabda carinulata*, formerly *D. elongata deserticola*) release site by the Emery County Weed Department in 2005 or 2006 for the purpose of tamarisk control. By the summer of 2008, several acres of defoliated tamarisk were obvious near the northern entrance of the WMA. Defoliation on tamarisk continues, but other tamarisk maintenance/control measures may be required to keep it at bay. Defoliated tamarisk plants can remain for years unless burned or mechanically removed. Habitat projects to remove dead and dying (or even live) tamarisk plants are considered a high priority on this WMA. The same is true for other invasive, noxious weeds.

Fish habitat has been improved by the acquisition of this property and the conversion of previously diverted irrigation water into an instream flow. Stream bank work and erosion control structures may also be advantageous along the river and creeks that flow through the Upper San Rafael WMA. The changes to the grazing management that are being implemented will also benefit native fish and their habitat.

Access Management Plan

All motorized/mechanized traffic is restricted to the county road that dissects the Fuller Bottom unit. These vehicles are restricted from the rest of the WMA. Only administrative vehicular traffic is permitted on the Hambrick Bottom unit of the WMA. All other access (loosely defined as foot, river raft/canoe, or horseback traffic) is permitted throughout the WMA. There are no additional roads planned for construction on the WMA in the foreseeable future.

Fire Management Plan

Campfires are not allowed on the WMA. Tamarisk wildfires are a threat on the WMA as long as tamarisk plants, either dead or alive, remain on the property. An understory of salt grass (*Distichlis spicata*) could carry a wildfire throughout much of the WMA. A wildfire could be detrimental to cottonwood trees and other native vegetation and should be suppressed. Carefully controlled prescribed fire, however, may be an acceptable alternative for dead tamarisk removal, provided that cottonwood trees and other desirable vegetation or features can be safely preserved. All activities dealing with wild and prescribed fire will be coordinated with the Division of Forestry, Fire, and State Lands (DFFSL), according to guidelines established in the Memorandum of Understanding (2005) between DWR and FFSL.

Wood Products

With the exception of tamarisk, wood products are scarce on this WMA. Cottonwood trees are common but not thick and should be preserved for their wildlife and aesthetic value. Should a market for tamarisk wood products be developed, this option may be considered in addressing the tamarisk problem, but most marketable tamarisk trees require a trunk thickness of at least 8-10 inches. There will be no other removal of wood products from the property.

Livestock Grazing Plan

DWR will manage grazing on the Fuller Bottom unit by combining the grazing management with an adjacent Trust Lands section and managing the grazing on both properties together. The permittee will maintain the fences in exchange for the grazing on the property, which will be a high intensity short duration grazing system. This will limit the need for fencing infrastructure and will be mutually beneficial for both groups. DWR and Trust Lands will ensure that grazing is done in compliance with acceptable use criteria and will closely monitor available grasses and vegetation. Any prescribed livestock grazing will be done according to Administrative Rule R657-28 Use of Division Lands. Grazing by domestic sheep, goats, llamas, or camels will not be

permitted on the Upper San Rafael WMA due to the close proximity of desert bighorn sheep and the inevitable incompatibility of the species.

In the past, trespass problems occurred when gates were left open, or fences were damaged or destroyed. Infrastructure including cattle guards at the north, south, and east perimeter were installed, which helped. This part of the WMA is completely surrounded by BLM/Trust Lands, which are permitted for grazing during the winter months (see Map 4). Prior to DWR's acquisition of the property, it was leased to a local rancher.

There is no formal grazing plan for the Hambrick Bottom unit, grazing on this portion of the WMA is currently leased to an adjacent landowner because there is no infrastructure to control grazing on the WMA. Emery County is a "Fence Out" county, meaning landowners are responsible for fencing their property to ensure that livestock don't graze within their boundaries. Fencing this portion of the WMA is not feasible due to no vehicle access and the parcels being separated.

SUMMARY STATEMENT OF PROPOSED USES

The primary function of the Upper San Rafael WMA is to protect and preserve habitat for native fish and wildlife species. An integral part of this is the protection and stewardship of the instream water rights that DWR is obligated to safeguard in perpetuity. DWR is also under obligation to maintain river access at the Fuller Bottom unit for recreational river runners floating the San Rafael River. All other management decisions will be made with consideration for these uses and must be compatible with enhancing and maintaining fish and wildlife habitat and hunting, trapping, and wildlife viewing opportunities. Uses that could be detrimental to wildlife or wildlife habitat, like ATV/OHV use (outside the BLM road), are expressly denied. Livestock grazing and prescribed burning are acceptable management practices so long as they enhance the primary function of the WMA.

MONITORING AND EVALUATION

The Habitat Program Manager has the ultimate responsibility of making sure that the tenets of this Habitat Management Plan are scheduled and applied. It is also his/her responsibility to evaluate the quality of work done and its relevance to the Habitat Management Plan.

ATTACHMENTS

Map 1. Location of Upper San Rafael River WMA, Emery County, Utah

Map 2. Upper San Rafael River WMA, Hambrick Bottom unit

Map 3. Upper San Rafael River WMA, Fuller Bottom unit

Map 4. Upper San Rafael River WMA, Proposed Fences

Appendix A. Property Legal Descriptions

Appendix B. Agreement (Exhibit B to Correction Special Warranty Deed)

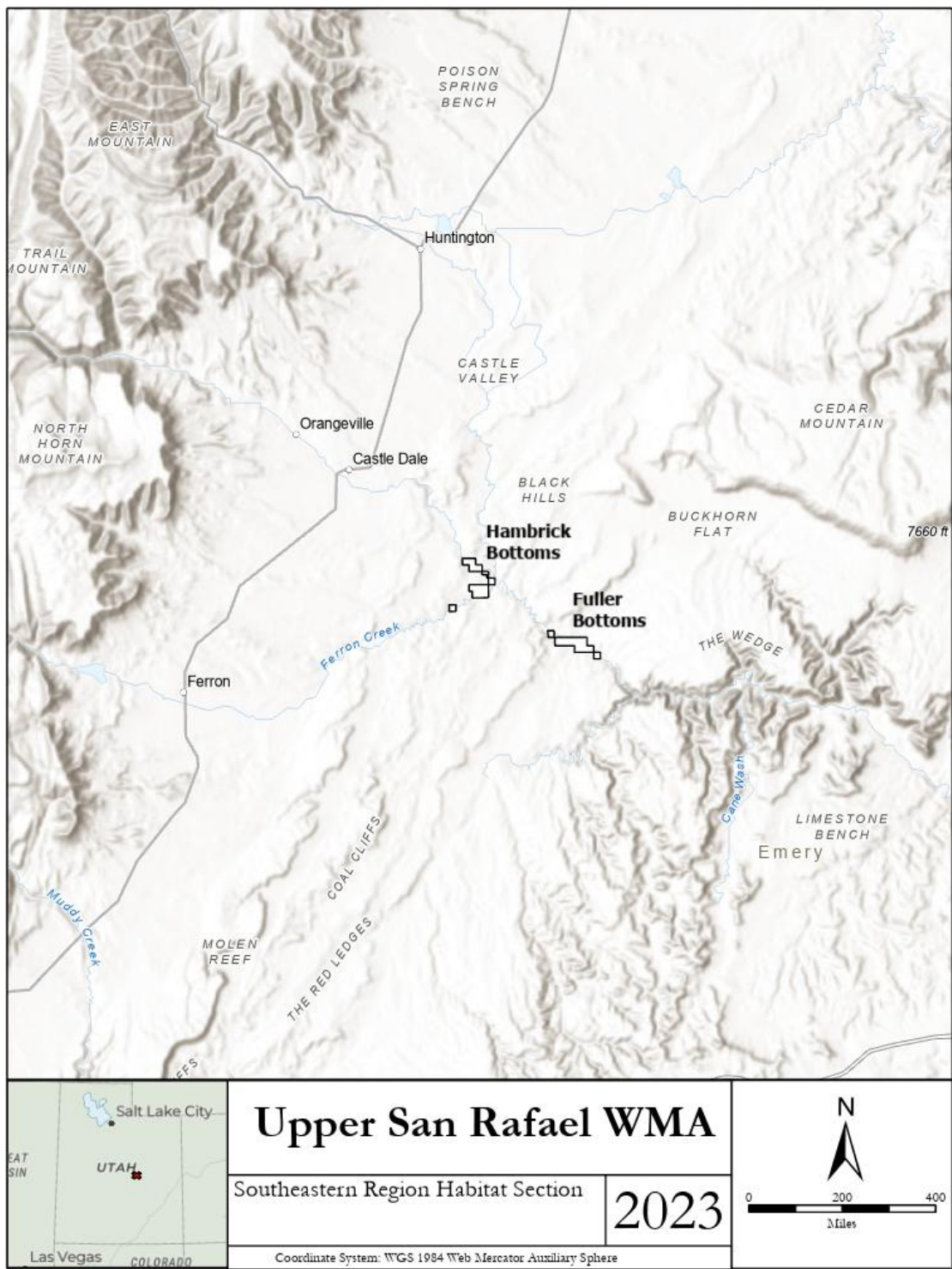
Appendix C. Correction Special Warranty Deed

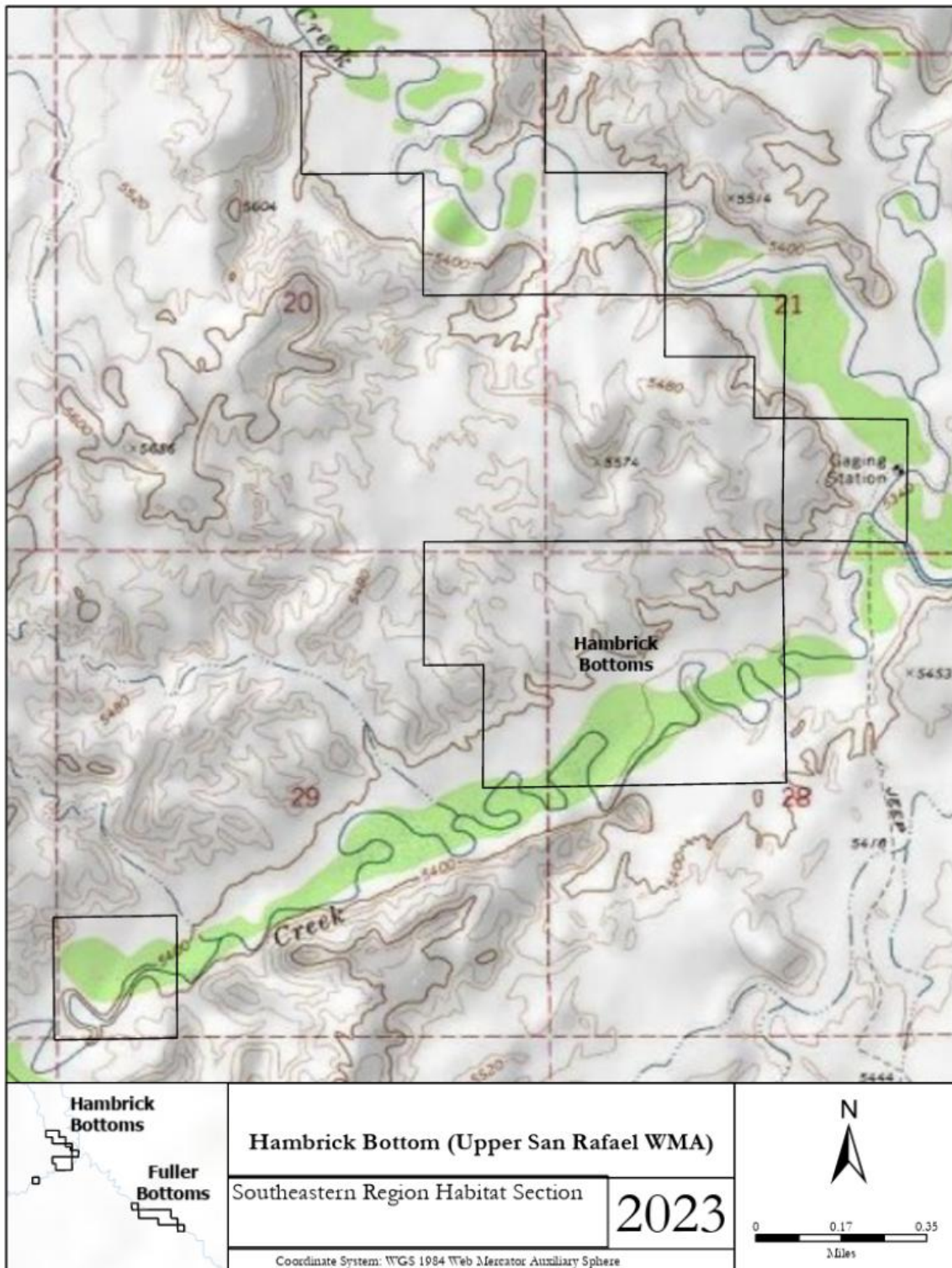
Appendix D. Memorandum of Understanding

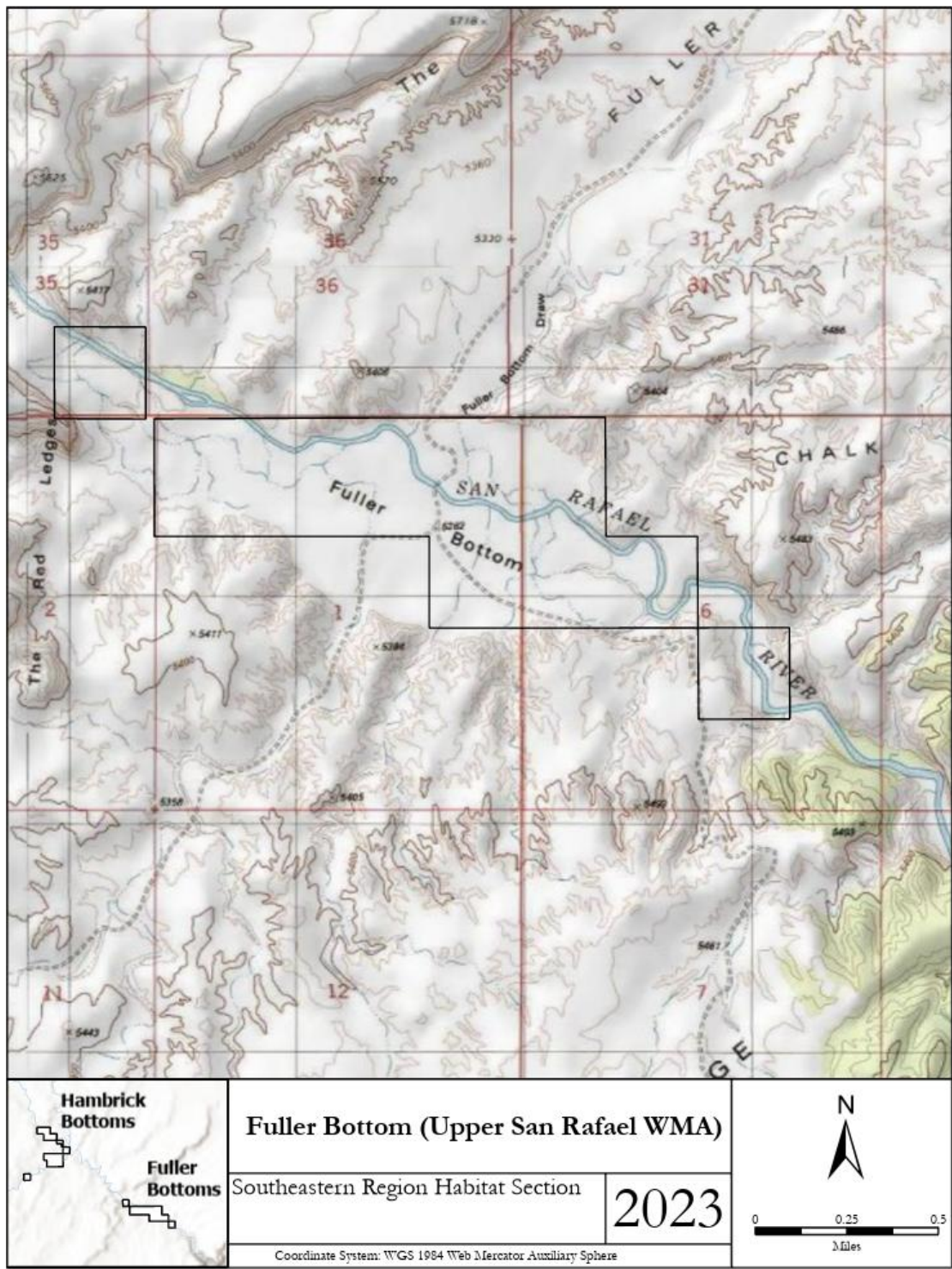
Appendix E. Water Rights Change Application Number 93-340

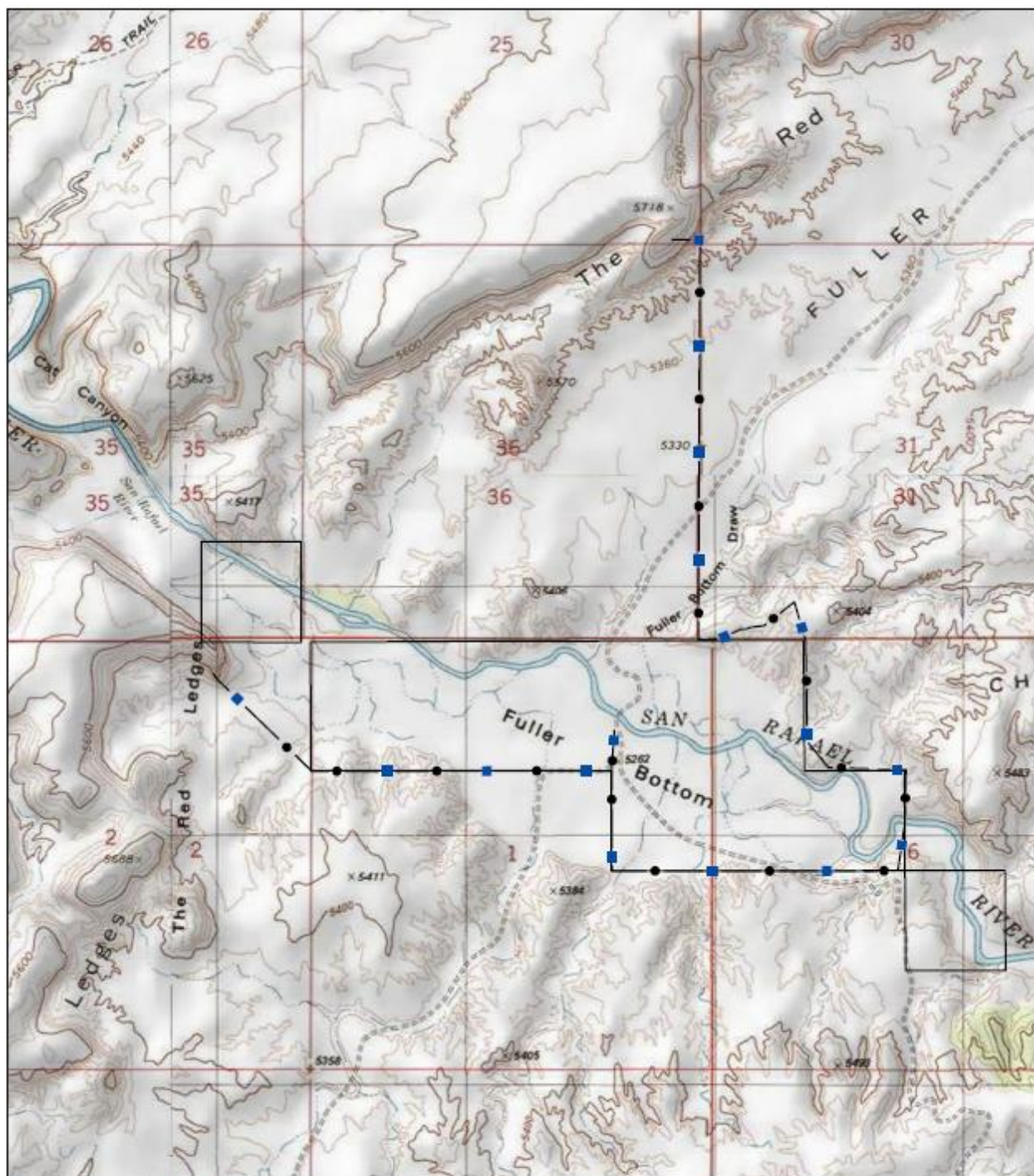
Appendix F. Bill of Sale

Appendix G. Citations









<p>Hambrick Bottoms</p> <p>Fuller Bottoms</p>	<p>Fuller Bottom (Upper San Rafael WMA)</p>		<p>◆ Proposed Fences</p> <p>□ Fuller Bottom Property Boundary</p> <p>0 0.25 0.5 Miles</p>
	<p>Southeastern Region Habitat Section</p>	<p>2023</p>	
	<p>Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere</p>		

Appendix A. Property Legal Descriptions

Hambrick Bottom unit:

Township 19 South, Range 9 East, Salt Lake Base and Meridian

Section 20	N1/2NE1/4, SE1/4NE1/4
Section 21	SW1/4NW1/4, SW1/4SE1/4, NE1/4SW1/4 (less W1/2SE1/4NE1/4SW1/4, SW1/4NE1/4SW1/4 containing 15 acres, more or less)
Section 28	NW1/4
Section 29	NE1/4NE1/4, E1/2SE1/4NE1/4, SW1/4SW1/4

Fuller Bottom unit:

Township 19	South, Range 9 East, Salt Lake Base and Meridian Section 35 SE1/4SE1/4
Township 20	South, Range 9 East, Salt Lake Base and Meridian Section 1 Lots 1, 2, 3, 4, SE1/4NE1/4
Township 20	South, Range 10 East, Salt Lake Base and Meridian Section 6 Lots 4, 5, 9, SE1/4NW1/4, NW1/4SE1/4

EXHIBIT B TO
SPECIAL WARRANTY DEED DATED
MAY 3, 1994
(Without exhibits)

AGREEMENT

This Agreement is made this 3rd day of May, 1994 between PacifiCorp, doing business as Utah Power & Light Company ("Company") and the State of Utah, Department of Natural Resources, Division of Wildlife Resources ("Division").

WHEREAS, Company owns land, water rights, grazing leases and permits, pumps, irrigation equipment, and other miscellaneous personal property ("Property") in Emery County, Utah, described on the Deed, Assignment and Bill of Sale, which are collectively referred to as the "Deed," and attached as Exhibit "A" to this Agreement, which is made a part hereof and incorporated herein by reference, and

WHEREAS, Company acquired the Property in connection with its construction and operation of its Hunter and Huntington steam electric generating plants located in Emery County, Utah and now wishes to donate the Property to Division subject to the terms and covenants contained within this Agreement, and Company's Board of Directors has authorized said donation, and WHEREAS, Division recognizes the significant wildlife value associated with the Property and wishes to accept the donation of the Property, in order to manage it to benefit wildlife, enhance recreation, and allow multiple uses consistent with wildlife objectives, and

WHEREAS, the parties have executed a Memorandum of Understanding on October 6, 1993 which set forth the basic terms of their agreement.

NOW, THEREFORE, the parties agree as follows:

1. On the date of the execution of this Agreement, Company will execute the Deed transferring the Property to Division. Company represents that the Property is subject to Company's indenture. As soon as is practicable after execution of the Deed from Company to Division, Company will take whatever action is necessary to acquire a Release of Mortgage from its indenture holder and forward same to Division.
2. On the date of the execution of this Agreement, Company will deliver proceeds from the sale of Company's Dugout, Jeffrey Well, Iron Wash, and Sweetwater grazing permits to Bureau of Land Management ("BLM") qualified livestock operators to Division to be used at the sole discretion of Division for future operation and maintenance of the Property, rehabilitation of the riparian corridor through the Property, enhancement of wildlife values on or in the vicinity of the Property, and acquisition of technical and legal experts to perform studies, provide advice or representation, or carry out other work related to the purposes of this Agreement. Division will deposit said monies in a special account created to accomplish the purposes of this Agreement

pursuant to §23-14-14, Utah Code Ann., and shall not commingle said monies and any interest accrued thereon with other Division special or general operating funds.

3. On January 28, 1994, the parties executed a Memorandum of Understanding with the BLM regarding Company's San Rafael allotment grazing permits. Company submitted an application to the BLM to transfer the San Rafael grazing permits to other base property Company owns prior to execution of this Agreement. At Division's request, title to the San Rafael allotment grazing permits will continue to be held by Company pending an evaluation of the San Rafael River allotment by the BLM pursuant to the January 28, 1994 Memorandum of Understanding. The BLM has permitted non-use status of the San Rafael allotment grazing permits pending this evaluation. Upon final BLM decision after its evaluation, Company and Division agree to meet with the BLM to determine appropriate action with regard to the San Rafael allotment grazing permits. Upon notice and direction from Division, Company will transfer the grazing permits to Division or another person or entity, or take whatever other action Division requests with respect to said grazing permits.

4. This Agreement is made and executed upon the following conditions and covenants:

a. Title to the Property, except for title to that part of the Property located North of the San Rafael River described as T. 20 S., R 9 E., SLB & M, Section I: Lots I, 2, SE ¼ NE ¼, shall remain with Division in perpetuity.

b. Division shall abstain from demanding Company limit use of, or abstain from using, or release from storage, water owned or controlled by Company for the purpose of supplying the water rights described in Exhibit "A" as part of the Property ("Property Water Rights.") One purpose of this condition and covenant is to subordinate the priority dates of the Property Water Rights to the priority dates of water rights owned by Company.

c. Division shall abstain from demanding Company to limit use of, or abstain from using, or release from storage, water owned or controlled by Company for the purpose of improving the quality of or mitigating the chemical or biological condition of the water making up the Property Water Rights.

d. Division shall not initiate, prosecute, maintain or voluntarily aid any action or other proceeding against Company based on Company's impairment of quality or quantity of the Property Water Rights caused, or alleged to be caused, by Company's usual and customary use of water upstream at Company's Hunter and Huntington steam electric generating plants.

e. Division shall use its best efforts to maintain the Property Water Rights by using them with such frequency or regularity as to avoid their loss by forfeiture or abandonment.

f. Only at such time as the Director of the Division of Water Rights issues a final Memorandum Decision and Order approving use of that portion of the Property Water Rights described in Application No. al 7629 for instream flow pursuant to §73-3-3(11), Utah Code Ann.. and if all time for appeals or other challenges to such final Memorandum Decision and Order has expired without appeal or other challenge, the Division shall thereafter: 4 (i) abstain from demanding any water user owning on the date of the execution of this Agreement a perfected and valid water right with a point of diversion and place of use upstream of the Property Water Rights ("Upstream Water Right") to limit use of, or abstain from using, or release from storage, water which would otherwise supply said Upstream Water Right to supply the Property Water

Rights. The effect of this covenant and condition is to subordinate the priority dates of the Property Water Rights to the priority date of said Upstream **Water Right**.

(ii) abstain from demanding any Upstream Water Right user to limit use of, or abstain from using, or release from storage, water to improve the quality of or mitigate the chemical or biological condition of the water making up the Property Water Rights.

g. Notwithstanding paragraph 14 of this Agreement, Company may waive the covenants and conditions set forth in this paragraph 4(b) through (d) by notifying Division in writing of such waiver.

5. If a final Memorandum Decision and Order approving Application No. al 7629 for instream flow pursuant to §73-3-3(11) is not granted, or if a final order in an appeal to said final Memorandum Decision and Order or other challenge to the instream flow use of the water rights described in Application No. al 7629 from which no further appeal may be taken is docketed which prohibits all or a part of the Property Water Rights from being used for instream flow pursuant to §73-3- 3(11), Division will continue to use that part of the Property Water Rights not approved for instream flow use in an authorized manner for the benefit of wildlife, recreation and the Property, including, but not limited to, irrigation.

6. For any of the Property Water Rights not approved for instream flow use, Division agrees to file with Company annual use reports indicating use of the Property Water Rights.

7. Division agrees to evaluate and protest any new application to appropriate water between the highest point of diversion of the Property Water Rights and the confluence of the San Rafael River with the Green River, and to take any further action Division deems necessary to protect the Property Water Rights on such new application after consultation with Company, unless otherwise agreed to between Division and Company at the time said new application is filed.

8. Company will make available to Division at its expense its records, personnel, and other expertise to support Division's change application and in any other judicial or administrative proceeding relating to the Property Water Rights.

9. Company makes no warranty as to the validity of the Property Water Rights transferred pursuant to this Agreement, except that they are of record, on file with the court, and published in the proposed determinations for the San Rafael River Drainage by the Utah Division of Water Rights. Both parties acknowledge that challenges to the validity of the Property Water Rights recently have been filed and are pending in the San Rafael River adjudication (Emery County Civil No. 1435). Each party agrees to use its best efforts to defend the validity and continued use of the Property Water Rights in the adjudication of the San Rafael River. Upon Division's request, Company will make its personnel and records available at Company's expense to defend the validity and use of the Property Water Rights in the adjudication of the San Rafael River or in any other administrative or judicial proceeding relating to the Property Water Rights.

10. The Division of Water Resources, the United States Department of Agriculture Soil Conservation Service, and the United States Department of the Interior Bureau of Reclamation are finalizing an Environmental Impact Statement for the Price-San Rafael Rivers Unit of the Colorado River Salinity Control Program and are seeking appropriations for funding to make on-farm and other agricultural practices improvements to decrease salinity in the San Rafael River. The Division of Water Resources. On behalf of itself and the other participating agencies, has

initiated discussion with Division for use of some of the Property in mitigation for the Price-San Rafael Rivers Unit of the salinity control program. While Division prefers on-site mitigation for salinity control programs. Division agrees to work cooperatively with the Division of Water Resources to enhance portions of the Property to meet salinity control program mitigation requirements. provided that the full cost of performing the mitigation will be borne by the project sponsors.

11. If any of the covenants and conditions set forth in paragraph 4 of this Agreement are alleged to have been violated by Division, Company agrees to notify and meet with Division and attempt to resolve the alleged violation. In the event Company determines, after consultation with Division, that a violation has occurred, then Company, at its sole option, may, upon written notice, demand and require that Division immediately reconvey the Property, with any improvements thereon made by Division, to Company. The parties will record a copy of this Agreement with the Deed in the office of the Emery County Recorder to give full public notice of the covenants and conditions in this Agreement and Division's duty to reconvey the Property pursuant to this paragraph. The purpose and intent of this paragraph 11 is to create a power of termination in favor of Company as Grantor upon its determination of a violation of the covenants and conditions described in paragraph 4 of this Agreement.

12. This Agreement shall be governed by, construed, and enforced in accordance with the laws of the State of Utah.

13. This Agreement shall constitute the entire agreement between the parties and supersedes the Memorandum of Understanding dated October 6, 1993 and any prior understanding, representation, or agreement of the parties regarding the subject matter hereof.

14. No delay or failure by either party to exercise any right under this Agreement and no partial or single exercise of that right shall constitute waiver of that or any other right unless expressly provided herein. Either party may by written notice waive any of its rights or any conditions to any obligations hereunder or any covenant or duty of the other party, provided, however, that Company may not waive Division's covenant to owners of Upstream Water Rights set forth in paragraph 4(f) hereof. No waiver shall affect or alter the remainder of this Agreement. Each and every covenant, duty, and condition hereof shall continue in full force and effect with respect to any other then existing or subsequently occurring breach.

15. In addition to the specific rights and remedies set forth in paragraph 11 hereof, the parties shall have all rights and remedies provided under Utah law for a breach or threatened breach of this Agreement. These rights and remedies shall not be mutually exclusive and the exercise of one or more of these rights and remedies shall not preclude the exercise of any other right or remedy. Each party confirms that damages at law may be an inadequate remedy for a breach or threatened breach of a provision: hereof and the respective rights and obligations of the parties hereunder shall be enforceable by a specific performance, injunction, or other equitable remedy.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day first above written.

APPROVED:

Robert G. Valentine Director
Utah Division of Wildlife Resources
Date: 05/03/1994
Natural Resources
Verl R. Topham President and CEO
Utah Power, a division of PacifiCorp, an Oregon Corporation
Date: 05/03/1994

Appendix C. Correction Special Warranty Deed

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CORRECTION SPECIAL WARRANTY DEED

PACIFICORP, an Oregon corporation (successor in interest by merger to Utah Power & Light Company, a Utah corporation), Grantor, hereby conveys and warrants to THE STATE OF UTAH, DEPARTMENT OF NATURAL RESOURCES, DIVISION OF WILDLIFE RESOURCES ("Grantee"), for the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the land and water rights situate in Emery County, State of Utah, described on Exhibit "A" to this Correction Special Warranty Deed, excepting therefrom any coal, oil, gas, and other minerals which may belong to Grantor.

Subject to easements, restrictions, and rights of way currently of record and/or enforceable in law or equity and the general property taxes for the year 1994 and thereafter.

Said property is subject to a partial release of mortgage.

Grantor specially warrants the right, title, and interest hereunder conveyed against the claims of any persons claiming by, through or under it, but not otherwise.

This grant and conveyance is made subject to the covenants and conditions set forth in that Agreement between Grantor and Grantee dated May 3, 1994, which is attached hereto as Exhibit "B" and incorporated herein by reference. If said covenants and conditions are violated by Grantee, Grantor may re-enter the Property subject of this Correction Special Warranty Deed and demand and require Grantee to reconvey it to Grantor pursuant to the procedure set forth in paragraph 11 of said May 3, 1994 Agreement.

IN WITNESS WHEREOF, Grantor has executed this Correction Special Warranty Deed by and through its duly authorized representative this 28 day of June, 1994.

337013
STATE OF UTAH
COUNTY OF EMERY
FILED AND RECORDED FOR
State of Utah
JUL 6 3 05 PM '94
IN BOOK 208
PAGE 679-702
COUNTY RECORDER

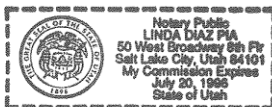
PACIFICORP

By Verl R. Topham
Verl R. Topham
Senior Vice President and
General Counsel
PacifiCorp, an Oregon Corporation

STATE OF)
COUNTY OF)
:ss

On the 28 day of June, 1994, personally appeared before me, a notary public, Verl R. Topham, who being by me first duly sworn, declared that he is the duly elected and authorized Senior Vice President and General Counsel, PacifiCorp, an Oregon corporation, and that the within and foregoing instrument was signed by authority of said corporation, and that he executed the same.

WITNESSETH MY HAND AND OFFICIAL SEAL.



Linda Diaz PIA
Notary Public

Appendix D. Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("MOU") is made this 6th day of October, 1993, by and between PacifiCorp, doing business as Utah Power & Light Company ("Company") and the State of Utah, Department of Natural Resources, Division of Wildlife Resources ("Division"). The parties anticipate that a formal Donation Agreement incorporating the principles set forth in this MOU will be executed between them within 120 days after execution of this MOU.

1. Company owns land, water rights, grazing leases and permits, pumps and irrigation equipment and other miscellaneous personal property ("Property") in Emery County, Utah, acquired for a continuous and assured water supply to its Hunter and Huntington steam electric generating plants. Such Property is described on Exhibit "A" to this MOU.

2. Company's first priority in managing the Property has been to protect the operation of its Hunter and Huntington steam electric generating plants. This has resulted in additional burdens on the Company and involvement in activities which are not within the Company's ordinary course of business.

3. Company wishes to dispose of the Property management burden while maintaining or increasing protection of the associated water rights for continued operation of its upstream steam electric generating plants.

4. Division recognizes significant wildlife values associated with the Property and is willing to accept the donation of the Property, subject to the terms and conditions set forth herein which will be more specifically set forth in the Donation Agreement and deed, and is willing to

MOM
10/13

Appendix E. Water Rights Conveyance Document

After recording, return to:
Division of Wildlife Resources
1636 West North Temple
Salt Lake City, Utah 84116

ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt and adequacy of which are hereby acknowledged, PACIFICORP, an Oregon corporation ("Assignor"), hereby sells, assigns, and transfers, to THE STATE OF UTAH, DEPARTMENT OF NATURAL RESOURCES, DIVISION OF WILDLIFE RESOURCES ("Assignee"), all of Assignor's right, title, and interest in and to the following described approved and unapproved water right applications ("Water Right Applications"), to have and to hold the same unto the Assignee, its successors, transferees, and assignees in interest.

Water User Claim #	Application #
93-1131	A40046
93-1158	A41911
93-1568	A55169
93-1569	A55170
93-3196	A56208
93-3197	A56209
93-3198	A56210
93-3199	A56211
93-3200	A56212
93-3201	A56213

STATE OF UTAH
COUNTY OF SALT
FILED AND RECORDED FOR
Utah Power
May 27 9 33 AM '94
IN BOOK 208
PAGE 208
COUNT RECORDER

Assignor specially warrants the right, title, and interest hereunder conveyed against the claims of any persons claiming by, through, or under it, but not otherwise.

DATED this 3rd day of May, 1994.

PACIFICORP

By Verl R. Topham
Verl R. Topham
President and CEO
Utah Power, a division of
PacifiCorp, an Oregon Corporation

STATE OF

COUNTY OF

On the 3rd day of May, 1994, personally appeared before me, a notary public, Verl R. Topham, who being by me first duly sworn, declared that he is the duly elected and authorized President and CEO of Utah Power, a division of PacifiCorp, an Oregon corporation.

WITNESSETH MY HAND AND OFFICIAL SEAL.



Linda Diaz PIA
Notary Public

Appendix F. Bill of Sale

After recording, return to:
Division of Wildlife Resources
1636 West North Temple
Salt Lake City, Utah 84116

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BILL OF SALE

PACIFICORP, an Oregon corporation (successor in interest by merger to Utah Power & Light Company, a Utah corporation), Grantor, hereby sells and conveys all its right, title, and interest in the property described on Exhibit "A" to this Bill of Sale to THE STATE OF UTAH, DEPARTMENT OF NATURAL RESOURCES, DIVISION OF WILDLIFE RESOURCES ("Grantee"), for the sum of Ten Dollars (\$10.00) and other good and valuable consideration. Grantor makes no warranty as to the condition of said property.

IN WITNESS WHEREOF, Grantor has executed this Bill of Sale by and through its duly authorized representative this 2nd day of May, 1994.

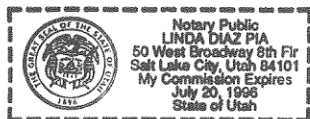
PACIFICORP

By Verl R. Topham
Verl R. Topham
President and CEO
Utah Power, a division of
PacifiCorp, an Oregon Corporation

STATE OF)
 :ss
COUNTY OF)

On the 2nd day of May, 1994, personally appeared before me, a notary public, Verl R. Topham, who being by me first duly sworn, declared that he is the duly elected and authorized President and CEO of Utah Power, a division of PacifiCorp, an Oregon corporation, and that the within and foregoing instrument was signed by authority of said corporation, and that he executed the same.

WITNESSETH MY HAND AND OFFICIAL SEAL.



Linda Diaz PIA
Notary Public

336773
STATE OF UTAH
COUNTY OF ENERGY S
FILED AND RECORDED FOR
MAY 27 9 34 AM '94
IN BOOK 288
PAGE 138-139
COUNTY RECORDER

Appendix G. Citations

Emery County Planning and Zoning: <https://emerycounty.com/wp-content/uploads/2023/02/cntyzone.pdf>

Emery County Resource Management Plan: <https://rmp.utah.gov/documents/emery-county-management-plan/explore>

Laub, Brian. (2013). Restoration and Monitoring Plan for Native Fish and Riparian Vegetation on the San Rafael River, UT.