

**DRAFT**

**ENVIRONMENTAL ASSESSMENT**

*Proposed*

**PICEANCE SWA PROPERTY EXCHANGE**

**Involving Lands and Water Rights  
Owned by  
Colorado Division of Parks and Wildlife  
And  
Exxon Mobil Corporation**

RIO BLANCO COUNTY, COLORADO

FEDERAL ASSISTANCE GRANT W-33-L

*Prepared by*

Colorado Division of Parks and Wildlife

*In cooperation with the*

U.S. Fish and Wildlife Service –Wildlife and Sport Fish Restoration Program  
Region 6  
Denver, CO

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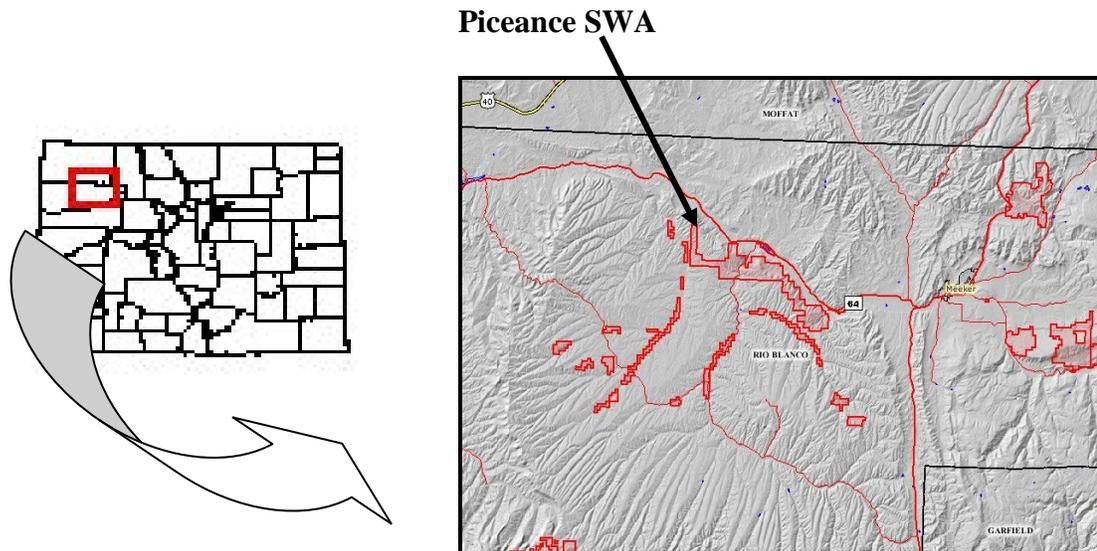
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## I. PURPOSE & NEED

Colorado Division of Parks and Wildlife (also known as Colorado Parks and Wildlife, CPW) has prepared this Environmental Assessment (EA) for the U.S. Fish and Wildlife Service (Service) in response to a proposal by CPW to exchange a parcel of land and water rights known as Piceance State Wildlife Area (SWA) – Square S Ranch Unit (Piceance Parcel) with Exxon Mobil Corporation (ExxonMobil) for other parcels of land (White River Scenery and Tschuddi Parcels). The Scenery and Tschuddi Parcels would become a new state wildlife area, but the White River Parcel would be annexed into Rio Blanco Lake State Wildlife Area. The Piceance Parcel was acquired with Wildlife Restoration Act (PR) federal funds (CO-W-33-L) in 1956 which is administered by the Services’ Wildlife and Sport Fish Restoration Program. Federal regulations require the Service approval prior to the disposal of any land acquired with PR funds. The Service’s decision to approve or disapprove the proposed land exchange constitutes a federal action pursuant to the National Environmental Policy Act of 1969 (NEPA). This EA has been prepared to examine the impacts of the land exchange in compliance with NEPA requirements.

The Piceance Parcel (Appendix A) is a single tract on Rio Blanco County Road 5 (CR 5) containing approximately 920 acres (900 acres less CR 5 area), with appurtenant water rights. It currently comprises a portion of the Piceance SWA (Figure 1.1). The original CPW purchases of land for the Piceance SWA occurred primarily in the 1950s to acquire big game habitat (particularly deer winter range), as well as for hunter access onto adjacent Bureau of Land Management (BLM) lands. See photographs of this parcel in Appendix B. ExxonMobil intends to use the Piceance Parcel as part of its energy development plans in the Piceance Basin in northwest Colorado.

Figure 1.1 General Location of Piceance SWA in Rio Blanco County in Northwest Colorado



Over the past several decades, the Piceance SWA has not only been impacted by drought, but also by increased mineral development activities in the surrounding areas. The SWA now exhibits reduced wildlife habitat values and has resulted in reduced big game populations.

Drought has also been responsible for diminished habitat quality, including reduced amounts of forage and sources of water. Increased mineral development activities are believed to have been more responsible for movement of deer and elk out of the Piceance Basin, once considered to be the largest deer herd in our country. Because CPW does not own the subsurface mineral rights for this parcel and by state law cannot prohibit future energy development activities, habitat quality and wildlife populations may continue to diminish in this area. This would then also result in decreased wildlife value of the Piceance SWA parcel to the public. The specific Piceance Parcel, Square S Ranch, in the proposed exchange extends for almost four miles along County Road (CR) 5. It is bordered by BLM land to the east and west. The Piceance Parcel currently is burdened by six easements and ExxonMobil currently has applied for additional easements over the Piceance Parcel. Additionally, ExxonMobil is the holder of some of the subsurface mineral rights beneath the Piceance Parcel. The current ExxonMobil easement applications (which will not be necessary if the exchange proceeds), the ExxonMobil ownership of subsurface rights, coupled with the present degradation of the Piceance Parcel due to the existing easements, is what prompted CPW's interest in the exchange.

R. Arnold Butler, M.A.I, Certified General Appraiser, of Grand Junction, Colorado, was hired jointly by CPW and ExxonMobil to appraise all the properties considered in this EA. His April 20, 2012 Appraisal Report for the Piceance Parcel, in the "Neighborhood [Piceance Creek]" section (pages 12-13), made the following pertinent comments:

*"Demand for natural gas development has expanded into the subject neighborhood from Rifle and Garfield County. This development has changed the character of the neighborhood from a secluded rural area to an area with heavy truck traffic, industrial drilling, gas transmission lines, and staging areas. The neighborhood, even with the current downturn in the energy industry, will forever be affected by the energy development. While agricultural operations will continue, the major focus of the area will be energy development."*

*"The mountainous areas of the neighborhood are used for summer grazing and fall big game hunting. While these uses continue, many of the energy companies either own or control that land and limit the access. Even though almost all of the mountainous areas are controlled by the BLM, most drainages that provide access to the mountains are controlled by gas companies."*

A final matter influencing CPW's interest to exchange its Piceance Parcel is that Rio Blanco County is planning to make road improvements on CR 5 next year. Due to the tremendous increase in traffic on CR 5 – particularly heavy energy company production trucks – the County plans to make 24 separate highway alterations and improvements to the highway south of the CR 5 and CO Highway 64 intersection. At the Piceance Parcel, the County has proposed two stock passes beneath the highway which will involve the use of an additional 5.6 acres of this parcel for a highway right of way.

In exchange for the Piceance Parcel, CPW would acquire three parcels from ExxonMobil, with appurtenant water rights, all of which are located north of the Piceance Parcel. These ExxonMobil Parcels (Appendix C and D) are briefly summarized as follows:

1. “White River Parcel” – 12 acre parcel south of Colorado HW 64 on the north side of the White River, bounded northerly by Rio Blanco Lake SWA.
2. “Scenery Gulch” – 600 acre canyon running north from Rio Blanco County Road 142.
3. “Tschuddi Gulch” – 1,379 acre canyon running north from CR 143.

Scenery Gulch and Tschuddi Gulch adjoin at their northerly ends. These two properties would become a single new state wildlife area. Both parcels provide high quality big game habitat, important areas for seasonal migration and management opportunities (such as grazing) for the improvement of the big game habitat, as well as several new water rights in this arid country. A very important aspect of Scenery and Tschuddi Gulches is that they both would provide excellent public access for hunting opportunities on the adjacent BLM properties surrounding Scenery and Tschuddi Gulches. Additionally, a log cabin in Scenery Gulch was used a number of times by President Theodore Roosevelt while hunting in the Meeker area. Public ownership of Scenery Gulch would protect this historic cabin.

The acquisition of the ExxonMobil Parcels will only include surface ownership rights; however, it is less likely that future development of subsurface energy resources will occur on the ExxonMobil Parcels given the known location of geological strata containing oil and gas resources in the Piceance Basin. Energy development on the White River Parcel would be precluded by its proximity to the White River.

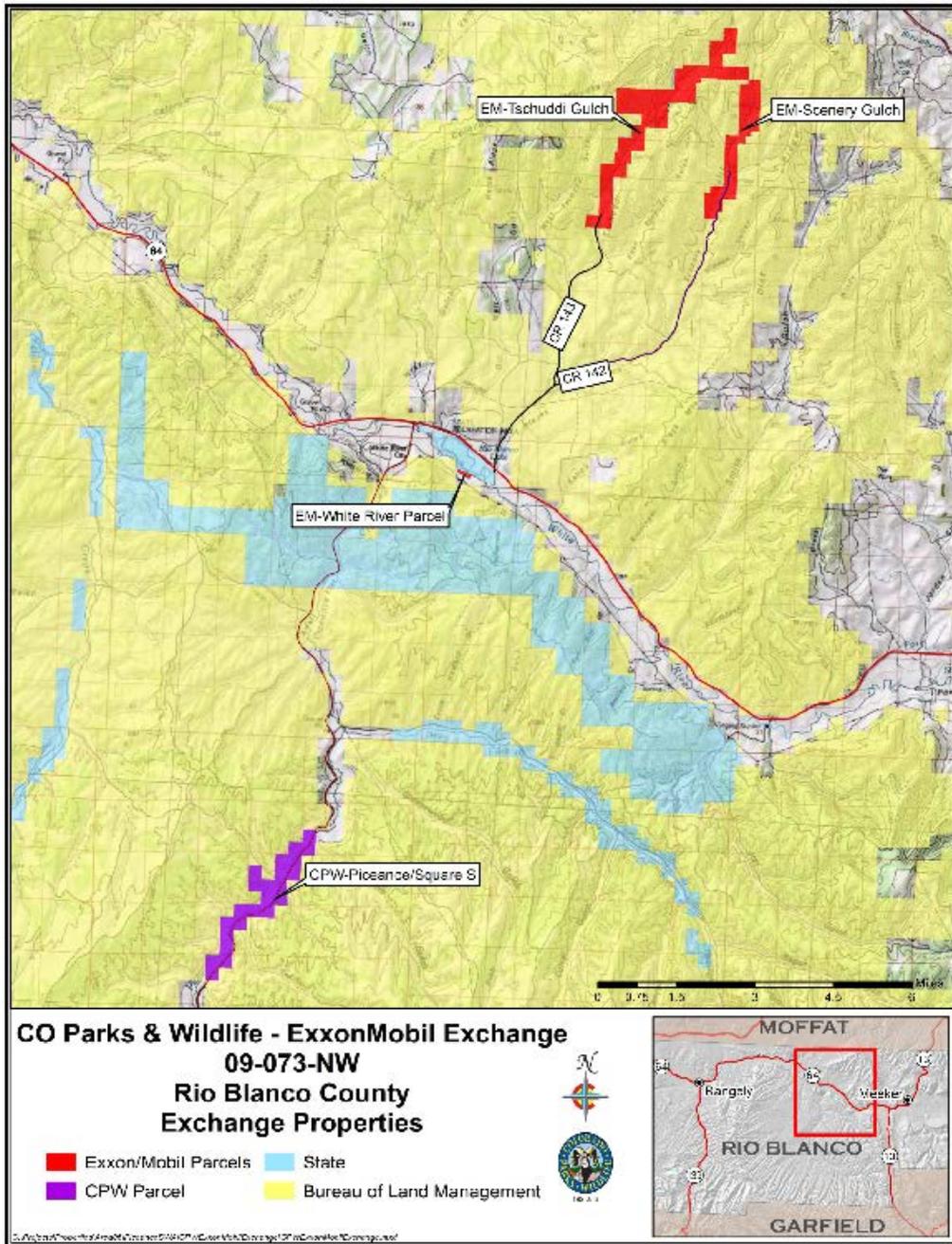
For these reasons, CPW and ExxonMobil have proposed this land exchange. CPW has determined that area wildlife resources and public recreational interests would benefit most through the proposed exchange. An initial informal internal scoping and planning meeting with the Service’s Wildlife and Sport Fish Restoration Program was held at CPW Headquarters in Denver on April 30, 2012. A public meeting was later held on June 15, 2012 from 5:30-7:00 pm at the CPW Area Office in Meeker, CO. The meeting was attended by 14 community members and no significant opposing views were voiced from those in attendance. Letters of concurrence from the Rio Blanco County Commissioners, as well as the local state representative and senator can be viewed in Appendix E. CPW and ExxonMobil have executed a formal Exchange Agreement, contingent upon the Service’s approval.

## II. ALTERNATIVES

### **Alternative A (PREFERRED ACTION)** – *Exchange of Identified CPW Piceance Parcel for ExxonMobil Parcels*

The proposed exchange will involve a total of approximately 910 acres of contiguous sections of fee title land and appurtenant water rights owned and managed by CPW as the Piceance SWA – Square S Ranch Unit (Piceance Parcel) in Rio Blanco County. These land and water rights were purchased with federal (PR) funding. The appraised value of the Piceance Parcel (land and water rights) is \$2,025,000. CPW will obtain approximately 1,991 acres of riparian habitat, high quality big game habitat, grazing land, and BLM access fee title property from ExxonMobil. The appraised value of the ExxonMobil parcels is \$2,080,000 (Scenery Gulch - \$1,050,000; Tschuddi Gulch - \$1,725,000; 12 Acre Rio Blanco Lake parcel - \$33,000).

The locations of Exchange Parcels in Rio Blanco County in northwest Colorado are shown in Figure II – 1.



Appurtenant Water Rights for the Piceance Parcel are in Appendix F. The water rights associated with the ExxonMobil Parcels are similarly described and depicted in Appendix F. Photos of all of the parcels are in Appendix G.

A Memorandum of Agreement (MOA 2012; Appendix H) between CPW and ExxonMobil has been approved to provide protection for potential populations of two federally listed plant

species that are known to occur in the vicinity of the Piceance Parcel (Appendix J). Prior to any disturbance, CPW will also be responsible for the mitigation of one historic finding.

### **Alternative B (NO ACTION)**

If no action is taken CPW would cancel the exchange with ExxonMobil and retain the current ownership of the land and water rights in the Piceance Parcel. CPW would, therefore, still have the current management issues, the energy development pressures, and five acres less land due to highway improvements that created its interest in the property exchange. CPW would not have the opportunity to obtain new lands with higher wildlife values, better grazing opportunities and new BLM access potential inherent in the ExxonMobil Parcels. Wildlife values on the Piceance Parcel would continue to be diminished by increased energy development activities. Ultimately, CPW would have to allow the additional easements and the development of the privately owned subsurface mineral rights on the Piceance Parcel.

### **Other Alternatives Considered but Dismissed from Further Analysis -**

#### ***Acquisition of other ExxonMobil Parcels and Property Interests in the Area***

CPW closely examined two other parcels obtained by ExxonMobil (Appendix E) for consideration as part of the exchange. These parcels are known as the White River Ranch (approximately 535 acres) and the Black Mountain Parcel (160 acres). The White River Ranch initially was of particular interest due to its riparian habitat, public fishing opportunities and extensive hay meadows. CPW decided against this property due to the strong possibility of the creation of a private mine waste disposal site directly across the White River, as well as the existence of numerous buildings on the property that would need continuing maintenance and repair (or necessitate demolition). The Black Mountain Parcel was rejected due to its questionable access and minimal wildlife habitat values. Finally, CPW considered a combination of fee title acquisition (White River Ranch) and the possibility of public access and/or conservation easements on one or both of Tschuddi and Scenery Gulches. This course was abandoned primarily due to CPW's disinterest in the White River Ranch and the overall higher wildlife values of the two gulch properties. Therefore, this alternative was not viable for CPW and it will not be addressed further.

#### ***Disposal of CPW Piceance Parcel (Land and Water Rights) and Acquisition of Replacement Properties***

CPW is considering the proposed exchange with ExxonMobil because the habitat value of the Piceance Parcel has been compromised, primarily by pressures resulting from nearby energy development. This situation is unlikely to improve. Replacing distressed areas such as the Piceance Parcel with other land in the vicinity is difficult. The Piceance Parcel and water rights were purchased with Pittman-Robertson Wildlife Restoration Act funds. If the Piceance Parcel was offered for disposal as surplus property, CPW would be required to replace any parcels or water rights at current fair market value based on appraisals. This option is difficult procedurally for CPW.

CPW is very limited in its ability to acquire real property interests. Except in the case of CPW acquiring property for non-monetary consideration (i.e. a complete donation of the property interest to CPW), acquisitions can only happen through (1) a fee title exchange (such as the one under consideration with ExxonMobil); (2) it's annual RFP process (which involves private parties offering fee title and easement interest in lands all over Colorado, not specific to the Piceance Basin); or (3) an outright purchase by CPW using funds specially segregated following a sale of surplus real estate or authorized by a special act of the Colorado Legislature. Finally, there are political issues involving the required approval of the Capital Development Committee (CDC) of the Colorado Legislature of any acquisition of real property. In recent years the CDC has rarely approved fee title acquisitions by CPW. Presumably, the CDC would be more likely to allow an exchange of fee title parcels than an outright purchase by CPW. Therefore, disposition and acquisition alternatives other than an exchange are not viable for CPW and will not be addressed any further.

### **III. AFFECTED ENVIRONMENT**

#### **LOCATION, MANAGEMENT and USE:**

The parcels proposed for the exchange are located in Rio Blanco County in northwest Colorado (Figure 1-1). The Piceance Parcel land and water rights are located in Piceance Creek, which runs through the Piceance Parcel northwesterly of, and parallel to, CR 5. Six gulches, including Hatch Gulch, Lee Gulch, and Bear Gulch, drain into Piceance Creek within the Piceance Parcel from the northwest and southeast. It is located approximately 20 miles west of the town of Meeker. It can be accessed by traveling west on Colorado Highway 64 from Meeker and then south on CR 5. The Piceance Parcel has not been surveyed and consists of a series of adjacent quarter and half sections straddling CR 5 and Piceance Creek. It is aligned generally northeast/southwest.

The ExxonMobil Parcels and water rights occur within the White River drainage in northwest Colorado. The White River Parcel is just south of HW 64 between the south side of Rio Blanco Lake State Wildlife Area and the north side of the White River, seventeen miles west of Meeker. The White River Parcel would be annexed to, and become part of, Rio Blanco Lake SWA. The White River Parcel is approximately seven miles north of the Piceance Parcel. The Scenery Gulch and Tschuddi Gulch EM Parcels are five miles northeasterly of Rio Blanco Lake SWA. Both are accessed from CO HW 64 by travelling north from CO HW 64 on CR 142 which runs to Scenery Gulch, and CR 143 which branches off of CR 142 and runs to Tschuddi Gulch. These two gulches would become a single new state wildlife area.

The Piceance Basin is comprised primarily by federally owned public lands managed by the BLM. Cattle ranching in Rio Blanco County began in the mid 1800s and large tracts of BLM land in this area are leased for cattle grazing (USDA/USDI, 1982). Today BLM also leases a significant portion of its mineral rights in this area to energy companies. CPW currently owns and manages the six separate property units of Piceance SWA and Rio Blanco Lake SWA, all in the Piceance Basin. Within Rio Blanco County, CPW also owns and manages Oak Ridge SWA and Jensen SWA and manages many hunting leases.

At one time, this area in Colorado contained the largest mule deer herd in the nation. Over time the use of the Piceance Basin by deer has changed. This change in use has been attributed to several causes including lower deer population numbers, shifting of deer habitat preferences to favor other locations outside of the Piceance Basin, and by changes in human use primarily related to energy development.

The Piceance Basin contains significant deposits of oil shale, nahcolite, natural gas, and other mineral resources (USGS, 1987). The greatest amount of mineral resource development in the Basin is related to increased energy resource (oil shale and natural gas) extraction and transport. Development of natural gas resources in the Basin has increased greatly (although subject to market fluctuations) since the late 1980s. This is expected to continue over the next decade based on current trends in consumer use of gasoline. The recent completion of major new pipelines and the repair or enlargement of existing pipelines and transport facilities continue to stimulate gas production in the area.

The mineral development and associated extraction activities that have occurred over the past several decades has resulted in the development of an extensive county road network on both private and public lands. It has also most likely been responsible for reducing deer populations in the area. Therefore, both original purposes for purchasing the Piceance Parcel – to protect big game winter range and to provide hunter access – have greatly diminished over time.

Due to the current market forces, oil and gas development has dramatically increased in northwestern Colorado. CPW does not own or control the subsurface mineral resources associated with the Piceance Parcel. Colorado state law provides that subsurface mineral right owners have the dominant estate over surface land owners in cases where the mineral and surface ownerships are severed (i.e., held by different parties). The subsurface mineral rights associated with the Piceance Parcel and adjacent lands have been leased for mineral development. The net result is that habitat and future use of CPW lands can and will be decided by the energy and mineral markets and federal mineral policy. These factors are beyond the control of CPW.

## **SOCIO-ECONOMIC RESOURCES:**

Population: The 2010 census found that Rio Blanco County had a total population of 6,666, with a total of 3,309 housing units. The county is largely rural and has two small towns. Meeker, located on the eastern side of the county and closest to the location of the exchange parcels, has a population of 2,475 with 1,219 housing units. Rangeley, located on the extreme western side of the county, has a population of 2,365 with 1,013 housing units. Historic population growth in Rio Blanco County has occurred at a slower rate than the national or state averages. Between 2000 and 2010 Rio Blanco County's population increased 11.4% (compared to the Colorado state-wide rate of 16.9%). Growth rates for the county are influenced substantially by fluctuations in oil and gas development.

Employment: It is estimated there are 4,106 active jobs in Rio Blanco County. The 2010 census indicates the largest percentage of these jobs was in the service sector (61%). Government jobs were the second most common source of employment (26%). Three other primary sources of income for county residents came from oil, gas, and mineral exploration and mining, agriculture,

and tourism. The tourism/recreation industry is expected to provide a higher percentage of overall employment in the county in the future.

Income: The annual per capita income for Rio Blanco County in the 2010 census was \$28,382, an increase from \$26,039 in the 2000 census. By the year 2025, the annual per capita income is expected to rise primarily as a result of increased oil and gas development and increases in recreation and tourism. Agricultural-based income is expected to decrease over this same time period.

### **ARCHEOLOGICAL, HISTORICAL, & CULTURAL RESOURCES:**

In July 2012, Alpine Archeological Consultants (Alpine) conducted a Class III cultural resource inventory of the Piceance Parcel (approximately 926 acres) currently owned and managed by the CPW (Alpine, 2012). The inventory was conducted to identify any significant historic resources or properties located within the exchange parcels and to evaluate them for their eligibility for inclusion on the National Register of Historic Places (NRHP).

The inventory resulted in the re-evaluation of four previously recorded sites and the documentation of three new historical archeological sites, as well as seven isolated finds. A total of seven sites and seven isolated finds were documented project wide. Of the seven sites, six were historic, and one was multi-component. No prehistoric sites were documented during the inventory. A variety of Euro-American site types were identified during the inventory, including three homesteads, two historic artifact scatters, and two historic road segments.

Of the seven cultural resource sites in the project area, only one is recommended as eligible for inclusion in the NRHP (5RB4770), and the remaining six are recommended as not eligible for the NRHP. The eligible site (5RB4770) is recommended as eligible for NRHP consideration due to its depositional potential, which suggests that the site may produce further information that can contribute to the knowledge of prehistory. Provisions to protect this site are proposed as part of the Exchange and will be outlined in a separate agreement between CPW and ExxonMobil (MOA, Appendix J). Steps by CPW to assure this site is fully protected will be completed within one year of closing on the real estate transaction.

### **PHYSICAL ENVIRONMENT:**

#### **Landscape**

The Upper Colorado River Basin encompasses approximately 113,500 square miles in parts of Arizona, Colorado, New Mexico, Utah, and Wyoming. The Piceance Basin is located near the center of the Upper Colorado River Basin. The Piceance Basin is a large drainage composed of about 2.1 million acres characterized by mesas that are bisected by gullies and gulches cut by mostly intermittent and some permanent streams.

The Piceance Basin (Basin) includes four major drainages. Piceance Creek and Yellow Creek drain the northern part of the Basin and discharge into the White River; the exchange parcels occur within these two drainages. The Roan Creek and Parachute Creek drain the southern part of the Basin and discharge into the Colorado River. The Piceance Property Exchange involves

the Square S Ranch parcel along the Piceance Creek that was purchased by the Colorado Division of Wildlife in 1956 with FWS Wildlife Restoration (PR) funding.

### **Geological Resources**

Approximately 48 million years ago during the Eocene Epoch, several large lakes covered thousands of square miles in parts of Wyoming, Utah, and Colorado. One of these lakes occupied two large structural basins in northeastern Utah and northwestern Colorado and is referred to as Lake Uinta. At its maximum size, Lake Uinta covered about 22,000 square miles (about the size of Lake Michigan) and extended about 190 miles from east to west and as much as 110 miles from north to south.

Vast quantities of oil shale accumulated as organic-rich marls in the deeper parts of the lakes. These marls, which are hundreds of feet thick, accumulated in the eastern part of Lake Uinta, now known as the Piceance Basin in Colorado. Scientists believe that algae and bacterial detritus were buried with these sediments that drained into the lake from its drainage basin and eventually solidified to form oil shale along with the formation of several other mineral resources.

The structural basin is a geologically downwarped region surrounded by uplifted regions which are common in the Rocky Mountain region. The downwarped region is a depositional basin filled with eroded sediments that have been consolidated to form sedimentary rock. The unusual longevity of Lake Uinta was made possible by continuous downwarping of the structural basins occupied by the lake. When downwarping ceased the basins filled rapidly with sediment and Lake Uinta disappeared about 40 million years ago. Some use the term “Piceance Creek Basin” to describe the part of the structural and depositional basin that lies between the Colorado River on the south, the White River on the north, the Douglas Creek arch on the west, and the Grand Hogback on the east.

Portions of the Exchange parcels that are occupied by bottomlands are comprised of an alluvium made up of mud, silt, sand, and gravel. Most of these alluvium geological materials were probably derived from nearby sources. The hillslopes are comprised of intertongued Uinta and Green River Formations (Eocene) materials. These tongues consist of mostly light-gray to white, variably silty marlstone; smaller amounts of local algal limestone; and some sandstone, siltstone, and claystone also occur.

### **Soils and Topography**

The Piceance Parcel is located along the main stem of Piceance Creek within the Piceance Basin. The parcel is composed of a combination of bottomlands and floodplains along Piceance Creek, alluvial fans at the terminus of tributary drainages, and low ridges and hillslopes associated with adjacent uplands. Several areas of rock outcroppings also exist on the parcel. The composition and extent of soil types on the parcel are shown in Appendix K. Soils are deep within the bottomlands, stream terraces, and alluvial fans associated with Piceance Creek, consisting of loams, sandy loams, and loamy sands. Soils within the upland areas are generally shallow, rocky loams. The Havre loam (Map Unit 41) is considered Prime Farmland if irrigated and makes up approximately 12% of the parcel (USDA/USDI 2009). The Piceance Parcel is designated as Prime & Unique Farmland by the USDA Natural Resource Conservation Service, Meeker Field Service Office.

## **Climate**

The climate in the Piceance Basin is arid to semi-arid; normal annual precipitation in the Piceance basin ranges from about 12 to 20 inches. Average annual precipitation for Rio Blanco County is 18.76 inches. Precipitation, in the form of rain and snow, is the source of the water that replenishes stream-flow and recharges the ground-water reservoirs. Occasionally, precipitation events are quite intense and result in large amounts of runoff heavily loaded with sediment to rush down through the drainages. An estimated 98 percent of precipitation is lost through evapotranspiration. The remaining water runs off rapidly and replenishes stream-flow or recharges the aquifers. The natural recharge replenishes the ground water that moves slowly toward sites of natural discharge along the streams.

## **Air Quality**

Although specific air quality monitoring is not conducted throughout most of the Exchange area, air quality conditions are likely to be very good. This air quality results from a combination of factors: relatively few air pollution emission sources (industrial, residential, etc.); good atmospheric dispersion conditions; and limited air pollutant transport into the area. In sum, these factors result in relatively low local air pollutant concentration (BLM, 2006). Energy companies are collecting air quality data at locations throughout the Basin (BLM, 2006).

## **Water Resources**

### ***Surface Water, Groundwater and Floodplains***

#### **Surface Water**

Piceance Creek is a perennially flowing stream with annual peak stream-flow generally aligned with snowmelt in spring. Maximum elevation in the watershed is approximately 9600 ft, and the gage location near the mouth above the White River is at 5730 feet elevation. The Square S exchange parcel is located approximately 10 miles above the mouth at elevation 6500 feet. Most annual peak flows occur between mid-March and late May, with the largest recorded daily flows during May. However, because of the relatively low elevation of the watershed, rain-on-snow events during late winter often result in elevated early peaks, including some of the largest instantaneous flows in the record. In contrast, in the driest years snowmelt runoff is barely discernible in the hydrograph.

The Piceance Creek watershed is also susceptible to high-intensity monsoonal events in late summer or early fall that high-mountain streams are not. High instantaneous peak flows derived from these storms are also responsible for much of the discontinuous gullying observed in Piceance Creek and other tributaries in the region, and often include debris flows from adjacent tributaries that bring new sediment into the main stream of Piceance Creek. Longer duration flows that occur due to snowmelt or rain on snow rework these sediments, and over time, create the relatively flat alluvial fill valleys that comprise most of the irrigated lands in the basin. The hayfields of the Piceance Parcel are typical alluvial fill sediments that span the valley bottom to the base of adjacent hill-slopes.

Complex geomorphological responses to high-intensity precipitation and runoff in many drainages result in rapid down-cutting and highly incised gullies. Gradual reworking of materials within the incisions is reflected by a meandering channel, narrow floodplains and riparian vegetation established within an incised gully. Much of the course of Piceance Creek

through the Piceance Parcel is incised, and access to a floodplain by most runoff events is limited to a thin strip of land within the incisions. Grade control is provided for by either more resistant shale layers or by physical grade control structures built by irrigators for water diversion. Two such structures are located on the Piceance Parcel for diversion of CPW water rights (see *Water Rights* section below).

### Groundwater

Three main groundwater aquifers occur within the Piceance Basin Structural Unit: (i) a deep aquifer (below the confining Mahogany Layer of oil-bearing shale); (ii) an upper aquifer above the Mahogany in predominantly Uinta group sandstones; and (iii) an alluvial aquifer; basically the water-bearing fill materials adjacent to Piceance Creek and tributaries. Despite the snowmelt signature, groundwater discharge from the upper aquifer accounts for a large majority of total annual surface flow in local creeks (SEO, 1978), highlighting the importance of perennial springs for flow maintenance in the region. Mean daily flow data is available for most years since 1965 (missing water years 1966-1970) from the Piceance Creek gage near the White River. An examination of baseflow data from this period of record shows the lagged benefits of wet years as groundwater aquifers continue to deliver water to the stream, and the cascading effects of multiple dry years. Since the latest dry cycle began in about 2000, baseflow in Piceance shows an increase in the number of days below 10 cubic feet per second (cfs) relative to prior periods. Low summer baseflows result in nearly annual calls for water by senior agricultural users with water rights on Piceance Creek most years.

### Floodplains

As alluded to above, active floodplains inundated by 1-2 year recurrence events ('bankfull' flows) are generally confined to those areas adjacent to the channel within incised areas, and are usually heavily vegetated with salt-tolerant facultative wetland species such as *Scirpus* spp., *Juncus* spp., *Typha* spp., *Distichlis* spp., *Sporobolus* spp. and *Phragmites* spp. In some areas of Piceance Creek, the natural course of the stream has been channelized to maximize hay production, minimizing active floodplain areas. This is evident to some extent in the southerly (upstream) part of the Piceance Parcel, but meandering increases downstream of the campground bridge in the northerly portion of the parcel (sinuosity = 1.4). Because there is more channel per linear length of valley bottom, increasing sinuosity subsequently increases the area of active floodplain.

FEMA floodplain maps used for flood hazard insurance were created in the mid-1990s, and designated as 'Floodplain Insurance Risk Maps' for Rio Blanco County (FEMA). This map depicts the 100-year floodplain along Piceance Creek through the Piceance Parcel, and shows variable widths which may reflect the degree of incision within a reach at the time the maps were made.

### ***Water Quality***

Water quality within the Piceance watershed is variable and is largely a factor of the source and timing of flow in the creek. Generally, runoff from the fine sandstone and shale parent materials contributes large quantities of suspended sediment, exacerbated during periods of high-intensity rainfall. During baseflow periods, the high percentage of groundwater contributions to surface flow result in high concentrations of dissolved constituents, and parameters such as total dissolved solids (TDS), hardness, or electrical conductivity reflect high levels of sodium and

calcium carbonates in the parent materials in the basin. Concentrations of these constituents tend to rise as discharge decreases. Surface water derived mainly from snowmelt may have lower concentrations of suspended sediment, dissolved minerals, and salts, but may contain organic constituents derived from flow off agricultural land. This is especially true during early surges of snowmelt runoff, as many local ranchers keep cattle on the Piceance Creek bottomlands during winter.

### ***Water Rights***

Water rights owned by CPW that are part of this exchange are listed in Appendix F. One of CPW's responsibilities with any property is to manage its portfolio of ditch rights, spring rights, and well rights for the beneficial use for wildlife, which may include entering into hayfield lease agreements to protect beneficial uses and enhance habitat. All the irrigation water itemized in Appendix F is currently leased so that the water is applied to the land, and nearly 300 acres are currently being irrigated. The lease governing land and water use by tenants on the Piceance Parcel contains provisions that protect riparian areas within the parcel. The note in Appendix F explains the history of appropriations for these water rights, followed by changes to points of diversion as these priorities were taken at upstream headgates (perhaps due to channel down-cutting). Recent diversions reflected by CDSS data for the Piceance Parcel consolidated point of diversion for the recent period of record (~1990 - present) indicate 317 AF minimum diversions (1988), 3198 AF maximum diversions (1996), and an average diversion of 1942 AF. These diversions did not account for other water taken at the Cox east and west diversions, located ~1 1/2 miles downstream.

Two other non-irrigation rights are also part of this exchange. Piceance Creek Well #5 is used as a water source for the campground. The Piceance Parcel Spring #3 emanates from the base of a cut-slope adjacent to the road, and fills a small depression creating a small open-water feature used by waterfowl and wildlife watering.

## **BIOLOGICAL RESOURCES**

### **Vegetation Resources**

Five general habitat types comprise the exchange parcel; 1) Irrigated Hay Meadows, 2) Riparian Habitat, 3) Bottomland Shrub, 4) Upland Sagebrush-Mixed Shrub, and 5) Pinyon-Juniper Woodland. In addition, three ponds covering approximately 2.5 acres also exist on the parcel. Aside from the irrigated hay meadows, the parcel remains in a largely native suite of habitat types, described in more detail below.

***Irrigated Hay Meadows*** – The irrigated hay meadows comprise approximately 289 acres (~31% of the parcel) and consist of a mixture of introduced pasture grasses and alfalfa (*Medicago sativa*). The hay meadows occur on level to near-level slopes in the bottomlands along Piceance Creek.

***Riparian Habitat*** – The stream through the Piceance Parcel is incised to considerable extent, with limited floodplain development, and is bordered by irrigated hay fields through the majority of the parcel. The area of riparian vegetation on the parcel is minimal, generally extending

several feet or less laterally from the open water of Piceance Creek. In all, riparian habitat comprises an estimated 4 acres (<1% of the parcel). The primary vegetation species found in the riparian zone include common reed (*Phragmites australis*), rushes (*Juncus* spp.), and a suite of facultative and obligate riparian/wetland grass species. There is essentially no woody riparian component developed on this portion of Piceance Creek within the Piceance Parcel.

**Bottomland Shrub** – The bottomland shrub community occurs on stream terraces adjacent to Piceance Creek and on alluvial fans at the terminus of tributary drainages. The irrigated hay meadows described above now occupy areas previously occupied by this community. Approximately 230 acres (~25% of the parcel) is occupied by this habitat and consists of a mixture of basin big sagebrush (*Artemisia tridentata* var. *tridentata*), black greasewood (*Sarcobatus vermiculatus*), rabbitbrush (*Chrysothamnus* spp.). Understory vegetation consists of a variety of grasses, including smooth brome (*Bromus inermis*) and basin wildrye (*Leymus cinereus*), as well as a suite of native and introduced forbs, including weedy mustards (Family Brassicaceae).

**Upland Sagebrush-Mixed Shrub** – This community occupies approximately 221 acres (~24% of the parcel) in a transition zone between the bottomland shrub and pinyon-juniper woodland communities. The community is dominated by stands of Wyoming big sagebrush (*Artemisia tridentata* var. *wyomingensis*) but also includes a variety of other shrubs in the overstory, including black greasewood, basin big sagebrush, rabbitbrush, broom snakeweed (*Gutierrezia* sp.), and smaller quantities of shadscale saltbush (*Atriplex confertifolia*) and gray horsebrush (*Tetradymia canescens*). Common understory species include prickly-pear cactus (*Opuntia* sp.), fringed sagewort (*Artemisia frigid*), Indian ricegrass (*Achnatherum hymenoides*), wheatgrasses, cheatgrass (*Bromus tectorum*), and phlox (*Phlox hoodii*).

**Pinyon-Juniper Woodland** – Pinyon-juniper woodlands occupy hillslopes and ridge tops on the parcel, generally where soils are rocky and/or shallow. Approximately 178 acres (~19% of the parcel) of woodlands occur on the parcel, dominated by mixed stands of pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*). The understory consists of a mixture of primarily native shrubs, grasses, and forbs. Common species include Wyoming big sagebrush, rabbitbrush, Indian ricegrass, bluebunch wheatgrass (*Pseudoroegneria spicata*), and phlox.

## **Wildlife Resources**

The Piceance Parcel supports a number of wildlife species. See Appendix L for a list of wildlife species that are known to occur or could possibly occur on the Piceance Parcel.

### ***Aquatic Habitat and Species -***

Piceance Creek, a perennial stream, runs south to north through the Piceance Parcel. Piceance Creek has been impacted by human development along most of its length over a period of many decades, first by agricultural practices (straightening and channelization, damming for irrigation headgates, and removal of water for hayfield irrigation) and more recently by energy development. The Piceance Parcel contains some of the less impacted reaches of this heavily altered stream. EPA has established a long-term monitoring site just downstream of the campsite

area as a control for other portions of the stream, but this area has also been impacted by development to a lesser extent.

Piceance Creek supports some fish through the Piceance Parcel reach. Trout (particularly brown trout) have been stocked periodically by nearby private landowners and the stream supports limited numbers of some non-protected native species (e.g., mountain sucker) as well. Cutthroat trout do not occupy this portion of the stream to any significant extent. While Piceance Creek supports fish, it does not provide a viable fishery for sport fishing or native species conservation purposes, due to the extensive channel and stream flow modifications present throughout its length. There is little to no recreational fishing demand through the Piceance Parcel.

### ***Big Game -***

The Piceance Basin supports large migratory herds of mule deer. Two migratory groups of mule deer winter in the Basin. One of these herds migrates in from the east and northeast; the other migrates a much shorter distance from the south/southeast. Many of these deer from both groups spend the winter in the vicinity of the Piceance Parcel. The most heavily used areas locally include the Yellow Creek divide to the west of the parcel, North Ridge to the northeast of the parcel, and the Magnolia area to the southeast of the parcel. The Piceance Parcel receives some year-around use by mule deer, but to a much lower extent than the nearby uplands mentioned above. Use of the hay meadows on the parcel is significant, however, during the spring and fall transition periods, when hay meadow forage (particularly where some alfalfa occurs) provides an important nutritional boost to mule deer entering or leaving winter range.

The Basin also provides habitat for numerous elk, most of which migrate into the area from the east and northeast. Elk use the Piceance Parcel to a lesser extent than mule deer, but can be found in the hay meadows on occasion in the spring and fall.

### ***Waterfowl -***

Several varieties of ducks (particularly teal) are present in low numbers along Piceance Creek on the parcel in the spring, summer, and fall. Geese are rarely observed on the property. The Piceance Parcel provides limited nesting habitat for ducks and some spring/fall migration resting habitat for a small number of waterfowl.

### ***Raptors -***

A number of periodically active raptor nest sites occur on cliff faces located on the Piceance Parcel. Nesting activity on these sites is primarily by red-tailed hawks, with occasional use by golden eagles.

## **SPECIAL STATUS SPECIES:**

The following table lists the federally listed species per the Endangered Species Act for Rio Blanco County:

### ***Birds-***

Greater Sage-Grouse (*Centrocercus urophasianus*) – Candidate  
Yellow-billed cuckoo (*Coccyzus americanus*) – Candidate

Mexican Spotted Owl (*Strix occidentalis lucida*)- Threatened

Mammals-

Black-footed ferret (*Mustela nigripes*) - Endangered

Canada lynx (*Lynx canadensis*) – Threatened

American wolverine (*Gulo gulo luscus*) - Candidate

Fish & Amphibians-

Bonytail chub (*Gila elegans*) - Endangered

Colorado pikeminnow (*Ptychocheilus lucius*) - Endangered

Humpback chub (*Gila cypha*) - Endangered

Razorback sucker (*Xyrauchen texanus*) - Endangered

Plants-

Dudley Bluffs bladderpod (*Lesquerella congesta*) – Threatened

Dudley Bluffs twinpod (*Physaria obcordata*) - Threatened

White River beardtongue (*Penstemon scariosus* var. *albifluvis*) - Candidate

Graham beardtongue (*Penstemon grahamii*) - Threatened

**Wildlife -**

Greater Sage-grouse do not occupy any portion of the Piceance Parcel. The nearest occupied Greater Sage-grouse habitat in the Piceance Basin is located some 4 miles to the southeast of the Piceance parcel. The Piceance Parcel is surrounded by significant areas of pinyon-juniper woodland, with very limited sagebrush sites nearby. Although some of the range-wide historic range analyses suggest that the northern end of the Piceance Basin may have supported Greater Sage-grouse historically, current vegetation distribution indicates little opportunity for sage-grouse to use the parcel, either currently or in the past.

Yellow-billed cuckoos could possibly occur in upland shrub habitat; however, the closest known occurrence of these birds was noted in Hayden, Colorado in Routt County approximately 60 miles northwest from the Exchange parcels. Yellow-billed cuckoo are quite rare in northwestern Colorado, although occasional pairs are located in the Yampa River riparian areas east of Hayden, Colorado. The birds are occupants of old growth riparian cottonwood stands with dense understories (Righter et al. 2004). The closest areas providing these habitat conditions occur along the White River above the mouth of Piceance Creek. This type of habitat does not occur on the Piceance Parcel.

Some limited preferred habitat (grass and forb wetlands) for Mexican spotted owls does occur on the Piceance Parcel; however, currently none are known to actually occur on the Piceance Parcel. This may be due to the agricultural impacts to this site over time.

No protected fish species listed for Rio Blanco County (Bonytail chub, Colorado pikeminnow, Humpback chub, and Razorback sucker) occur in aquatic habitat within the Piceance Parcel. Habitat for the four endangered fishes of the Colorado River system occurs in the White River downstream of the property, but none are likely to occur on the parcel.

Canada lynx and the American wolverine do not currently occur in the vicinity of the Piceance Parcel. Preferred habitats for these two species are much higher in elevation.

### ***Plants -***

Two federally protected plant species are known to occur in geological formations that are common in this part of the Piceance Basin: Dudley Bluffs bladderpod (*Lesquerella congesta*) and Dudley Bluffs twinpod (*Physaria obcordata*). Both of these plant species are members of the mustard family (Brassicaceae) and are known to occur in small populations on barren, white shale outcrops derived from the oil-bearing shale of the Green River and Uinta Formations in Colorado. They are currently listed as “Threatened” in their known range which includes the Piceance Creek, Yellow Creek, and Lower White River drainages within the Piceance Basin in northwest Colorado. See Appendix L for a map of potential threatened plant species occurrence. The recovery plan for both the Dudley Bluffs twinpod and bladderpod was completed in 1993. Since then a five-year review was conducted and approved in 2008. The five-year review indicated that these species are high priority due to the high degree of threat they face from development projects relating to oil and gas. The five-year review found that both species still warrant the current classification.

The Piceance Parcel has been surveyed at least twice during the preparation of two large Environmental Impact Statements to allow for two large oil and gas pipelines to be built along the western edge of the bottomland in the Piceance Parcel. According to the Colorado Natural Heritage Program database results (CNHP, 2012) there are currently no occurrences of these two species on the Piceance Parcel.

White River beardtongue is not known to occur in this part of Rio Blanco County; it only occurs on raw shale barrens and oil shale barrens of the Evacuation Creek and Parachute Creek Member of the Green River Formation. Graham beardtongue only exists in a series of small populations in a narrow band from Raven Ridge, west of the town of Rangely in Rio Blanco County, CO, westward to the vicinity of Sand Wash near the point where Carbon, Duchesne and Uintah Counties meet in the Uinta Basin of Utah (a band ~ 80 miles long by 5 miles wide).

## **IV. ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES A & B:**

### **ALTERNATIVE A (PREFERRED ACTION) - *Exchange of Identified Lands and Water Rights***

The Piceance Parcel is part of what was once an important deer use area both in Colorado and in our country. Over the past several decades changes in deer use on the Piceance Parcel have been influenced by changes in the intensity and types of other land uses. The cyclic natures of energy development and drought have been the two overriding influences to the environment in the Piceance Basin over the past 50 years. Currently the increasing development of energy resources in the Piceance Basin appears inevitable given demand for these resources, the resources available, and trends toward increasing prices for oil and gas. Due to this expected continued energy development, CPW anticipates increased impacts to deer and elk in the area, ultimately resulting in a decreased benefit to the public for hunting on these parcels.

CPW would exchange seven water rights with ExxonMobil. Also, ExxonMobil would obtain several wetlands owned and managed by CPW. CPW would obtain 19 new water rights associated with the ExxonMobil Parcels. These include different sized wetlands, including

small-to-large (about one acre in size) ponds, which provide an important habitat resource for all wildlife in the area.

ExxonMobil and CPW have entered into an agreement to assure continued and thorough study of one identified cultural resource site at the Square S Ranch parcel as well as long-term protection of potential habitat of two federally protected plant species at this site (MOA; Appendix J),

ExxonMobil has not indicated plans to immediately develop the individual Piceance parcel. It does seem likely, however, that future plans for energy development activities will be influenced by the fluctuating cost of oil in the U.S.

The ExxonMobil Parcels that CPW will acquire through the exchange will add important high quality deer and elk habitat for the agency and will provide hunting access onto adjacent BLM lands in the White River drainage. CPW will not obtain the subsurface mineral rights as part of this Exchange; the mineral rights are currently privately owned. However, mineral resources in this part of Rio Blanco County are known to not be as substantial and to be located much deeper below the surface than those of the Piceance Parcel. This would make these resources much less economically viable to development. The water rights associated with these are included in the exchange (Appendix F).

CPW believes it will not be able to effectively protect wildlife or public values on a short-term or long term basis on the Piceance Parcel due to imminent energy development activities already proposed for the Piceance Parcel, as well as the fact that CPW does not control the subsurface mineral rights for these parcels. Under these circumstances, CPW believes it is prudent to protect and enlarge those properties it owns with the highest wildlife values, greatest opportunity for use of management practices to enhance wildlife habitat, and that are least likely to be impacted by energy resource development in the future.

#### **ALTERNATIVE B (NO ACTION)**

If the No-Action alternative occurs CPW would retain ownership and management of the Piceance Parcel and it would still face difficulties in managing these areas due to proposed energy development activities. In the end, whether or not this exchange occurs, CPW has little to no ability to protect the Piceance Parcel (lands and water rights) since it does not own the underlying mineral rights. Both lands and water rights comprising the Piceance Parcels would likely be subject to subsurface mineral development by other owners. Future subsurface mineral resource development could still have serious impacts to the identified cultural resource at the Square S Ranch parcel and the potential occurrence of federally listed plant species and their habitat at this site. At that point little to no protection would be afforded these two resources. Development of subsurface mineral resources on the Piceance Parcel could result in impacts to not only surface water quality, but also possibly ground water quality. Any impacts to the water resources by energy development would need to be documented and mitigated for in the future by the mineral rights lessee.

ExxonMobil has obtained its two exchange parcels in anticipation of the exchange with CPW. If the No Action alternative occurs, the ExxonMobil Parcels would most likely be disposed of to a private party by ExxonMobil, since CPW would not be able to afford to purchase them. Also,

CPW would not be able to obtain big game habitat with high wildlife values in the vicinity of the Piceance Basin area.

In summarizing CPW’s decision for proposing the exchange, it is evident that when assessing the future of the Piceance Basin in terms of potential for energy development, the Proposed Action would undoubtedly provide the most opportunity for CPW to obtain land with high wildlife values, while providing the most hunting and fishing benefits to the public. CPW is wholly in favor of the exchange and is looking forward to gaining property with much higher wildlife, water resource, and wetlands values. A summary of potential impacts to identified impact topics is provided below for both alternatives in Table IV-1.

**Table IV-1: Summary Table of Potential Impacts to Identified Impact Topics.**

Impact Topics	Impacts by Alternative	
	Proposed Action	No Action
<b>WILDLIFE</b>	<p><b>Piceance Parcel</b> – Big game species (deer and elk) could continue to experience impacts from energy development and drought. CPW would no longer have to be involved with future surface use agreements for subsurface mineral development and/or associated ROWs for access, pipelines, and power lines across this parcel.</p> <p><b>ExxonMobil Parcels</b> - Land with higher wildlife values (improved habitat &amp; migration corridors), and located further from future potential energy development would be acquired. Management benefits for CPW would include grazing opportunities to improve wildlife habitat.</p>	<p><b>Piceance Parcel</b> - Potential energy development will continue to cause decreased wildlife values due to decreased deer and elk populations. CPW would still have to allow development of subsurface mineral rights and/or associated ROWs for access, pipelines, and power lines across this parcel.</p> <p><b>ExxonMobil Parcels</b> - Lands with higher wildlife value (habitat /migration corridors) would not be protected or managed. CPW could not purchase these sites without the financial gain from the exchange. CPW would not obtain management opportunities to use grazing to improve big game habitat.</p>
<b>HUNTING &amp; FISHING</b>	<p><b>Piceance Parcel</b> - Limited hunting and fishing opportunities would continue to be available on this parcel primarily due to increased current and likely future energy development activities.</p> <p><b>ExxonMobil Parcels</b> – Many increased hunting and fishing opportunities would be available to the public. These would likely not be impacted by future energy development in the Piceance Basin. CPW would be able to manage the grazing in the parcels, as well as the water resources to continue to improve the wildlife values of the parcels</p>	<p><b>Piceance Parcel</b> - Hunting and fishing opportunities would continue to be limited on this parcel primarily due to increased current and likely future energy development activities. CPW would still have to allow development of subsurface mineral rights and/or associated ROWs for access, pipelines, and power lines across this parcel.</p> <p><b>ExxonMobil Parcels</b> - Lands with higher wildlife value (habitat /migration corridors) would not be protected or managed. CPW would not be able to provide increased hunting and fishing opportunities to the public in this area. CPW could not purchase these sites without the financial gain from the exchange.</p>
<b>WATER RESOURCES</b>	<p><b>Piceance Parcel</b> - Seven appurtenant water rights are included in the exchange.</p> <p><b>ExxonMobil Parcels</b>– Nineteen water</p>	<p><b>Piceance Parcel</b> – CPW would still have the seven water rights associated with the Piceance Parcel, which could be impacted by future</p>

	rights are included in the exchange. These water rights include different sized wetlands, as well as small-to-large ponds (up to an acre in size), that collectively provide important habitat resources for all wildlife in the area. These water rights have a significantly higher value than the Piceance Parcel water rights.	energy development. <b>ExxonMobil Parcels</b> – CPW would not have access to the nineteen water rights associated with these parcels. CPW would not acquire additional water rights that provide important water resources for all wildlife in the area.
<b>WETLANDS</b>	<b>Piceance Parcel-</b> Wetland areas associated with water rights could be impacted by potential subsurface energy development. <b>ExxonMobil Parcels-</b> Numerous new ponds, seeps and small springs would be acquired. When managed and protected by CPW, future possible degradation of these habitats would not occur.	<b>Piceance Parcel-</b> Wetland areas could still be impacted by energy development since CPW does not own the subsurface mineral rights <b>ExxonMobil</b> – Numerous new ponds, seeps and small springs would not be acquired by CPW and then would not be managed and protected which could result in future degradation of these habitats.
<b>SPECIAL STATUS SPECIES</b>	<b>Piceance Parcel</b> – No known federally protected species will be directly impacted by this Exchange. CPW and ExxonMobil have entered into an agreement for the long term protection of potential occurrence of two federally protected plant species and their habitat (MOA, 2012).	<b>Piceance Parcel</b> – Potential occurrence of federally protected plant species could still be impacted on the Piceance Parcel since CPW does not control the subsurface mineral rights. This species and its habitat could therefore be impacted since they would not be afforded any long term monitoring and protection.
<b>CULTURAL RESOURCES</b>	<b>Piceance Parcel</b> - One cultural resource site could be impacted on the Piceance Parcel. Negotiations with the Service and SHPO have determined that the best course of action is for CPW to assure further study and documentation of this finding (MOA, 2012). The historical Teddy Roosevelt cabin could be protected under the Section 106, National Register of Historical Places.	<b>Piceance Parcel</b> - One cultural resource site could still be impacted on the Piceance parcel since CPW does not control the subsurface mineral rights. This site would not be afforded any additional study and documentation.

In summary, the Proposed Action would assure that land with higher wildlife values (improved habitat & migration corridors), and located further from future potential energy development would be acquired and managed by CPW. The Proposed Action will add important high quality deer and elk habitat for the agency and will provide hunting access onto adjacent BLM lands in the White River drainage. This will result in many new hunting and fishing opportunities for the public. CPW would also be able to manage grazing opportunities to continue to improve wildlife habitat on these new parcels. Importantly, CPW would acquire several additional water resources, including numerous new ponds, seeps and small springs on the ExxonMobil Parcels that would increase the overall wildlife values of this new property. Also, CPW would no longer have to be involved with future surface use agreements on the Piceance Parcel for subsurface mineral development and/or associated ROWs for access, pipelines, and power lines across this parcel.

## **Cumulative Impacts**

A cumulative impact on the environment results from incremental effects of present proposed actions when considered in light of past, present, or reasonably foreseeable future actions, regardless of who implements them. Cumulative impacts can result from individually minor but collectively significant actions taking place over time. An important question in the current NEPA analysis is whether the present proposed action is likely to result in an unintended but significant cumulative effect. A cumulative impact is defined in 40 C.F.R. §1508.7 as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

Past boom-and-bust cycles of energy development in the Piceance Basin have most likely resulted in diminished big game populations and overall wildlife values in this area. With the current increase in energy resource development in the Basin especially on adjacent Bureau of Land Management lands, big game herds in this area will likely continue to diminish. CPW does not own the subsurface mineral rights under the Piceance Parcel so is not able to control future development of these minerals and resultant significant impacts to wildlife values in this area. If this was to occur, any chance to protect big game habitat, special status species, and cultural resources occurring on public lands would be lost. The one cultural resource finding that was identified during the Class III Cultural Resource Survey conducted on the Piceance Parcel would not be further mitigated and could be negatively impacted by any future subsurface energy development on the site.

This exchange would aid CPW in the management of public lands in the Piceance Basin and the White River drainage. Any cumulative loss of hunting lands accessible to the public in the Piceance Basin through the exchange would be offset by the availability of additional hunting areas with much higher wildlife values further north of the Piceance SWA, where future energy development is unlikely in the foreseeable future.

## **V. LISTING OF AGENCIES & PERSONS CONSULTED**

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## V.II APPENDICES