

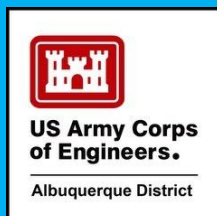
# JOHN MARTIN RESERVOIR MASTER PLAN



## ARKANSAS RIVER BASIN

BENT COUNTY, COLORADO

June 2018



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REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
ALBUQUERQUE DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
4101 JEFFERSON PLAZA NE  
ALBUQUERQUE, NM 87109-3435

CESPA-OD

29 May 2018

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers (USACE), Albuquerque District (SPA)

SUBJECT: John Martin Reservoir, Colorado Master Plan Revision (April 2018)

1. PURPOSE: Enclosed subject Master Plan is submitted for review and approval in accordance with Engineering Regulations (ER) 1130-2-550, Change 7 and Engineering Pamphlet (EP) 1130-2-550, Change 5.

2. BACKGROUND/DISCUSSION: In accordance with ER 1130-2-550 Change 07, dated 30 January 2013 and EP 1130-2-550 Change 05, dated 30 January 2013, Lake Project master plans are required for most USACE water resources development projects having a federally-owned land base. This revision of the John Martin Reservoir Master Plan is intended to bring the master plan up to date to reflect ecological, socio-demographic, and outdoor recreation trends that are currently affecting the lake, as well as those anticipated to occur within the planning period of 2018 to 2043, a 25-year period.

3. SUMMARY OF CHANGES: The revision resulted in the preparation of new resource management objectives and the following changes to land use classifications:

Prior (1974) Land Classifications		New Land Classifications	
	Acres		Acres
Project Operations	438	Project Operations	514
Operations: Recreation – Intense Use	680	High Density Recreation	1,307
		Environmentally Sensitive Areas	227
Secondary Allocation to Low Density Recreation	1,213	Multiple Resource Management – Low Density Recreation	
Operations: Wildlife Management	8,246	Multiple Resource Management – Wildlife Management	8,602

a. The above changes were the result of public and stakeholder review and comment, review of regional trends in outdoor recreation and resource protection, and compliance with Federal policies and mandates governing Federal land use. Environmentally Sensitive Areas were identified for the protection of threatened and endangered species and their habitat, as well as culturally significant sites and unique views and landscapes.

b. In accordance with the National Environmental Policy Act of 1969, including guidelines in 33 Code of Federal Regulations Part 230, an Environmental Assessment (EA) was prepared to assess the potential impacts that the alternative management scenarios set forth in the 2018



CESPA-OD

SUBJECT: John Martin Reservoir, Colorado Master Plan Revision (Apr 2018)

John Martin Master Plan (2018 Master Plan) would have on the natural, cultural, and human environments. The EA evaluated and analyzed two alternatives: a No Action Alternative (continued use of the 1974 Master Plan) and the implementation of the 2018 Master Plan. Based on the findings of the EA, the implementation of the 2018 Master Plan would not result in significant adverse impacts on the environment or constitute a major Federal action significantly affecting the quality of the human environment.

c. The Master Plan and EA have been reviewed by the Regional Planning and Environmental Center, SPA Operations, and SPA Office of Counsel. The final version of the documents went through a 30-day public and agency review. All comments from the reviews have been addressed.

4. RECOMMENDATION: The Project Delivery Team members have reviewed and approved the Master Plan revision. The team recommends approval by each signatory, as well as approval and signature of the Findings of No Significant Impact by the commander.

Approve <input checked="" type="checkbox"/> Disapprove _____ Date <u>30 May 18</u>	Jonathan B. Tague Operations Project Manager, John Martin Dam TAGUE.JONATHAN.BILL.1540074549 <small>Digitally signed by TAGUE.JONATHAN.BILL.1540074549 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=TAGUE.JONATHAN.BILL.1540074549 Date: 2018.05.30 08:24:27 -06'00'</small>
Approve <input checked="" type="checkbox"/> Disapprove _____ Date <u>29 May 18</u>	Derrick T. Dunlap Chief, Lakes and Assets Operation Division DUNLAP.DERRICK.T.1232198946 <small>Digitally signed by DUNLAP.DERRICK.T.1232198946 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=DUNLAP.DERRICK.T.1232198946 Date: 2018.05.29 12:05:00 -06'00'</small>
Approve <input checked="" type="checkbox"/> Disapprove _____ Date <u>29 May 18</u>	Beverly J. Noel-Chavez Chief, Operations Support Branch Operations Division NOEL-CHAVEZ.BEVERLY.J.1231370192 <small>Digitally signed by NOEL-CHAVEZ.BEVERLY.J.1231370192 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=NOEL-CHAVEZ.BEVERLY.J.1231370192 Date: 2018.05.29 12:13:23 -06'00'</small>
Approve <input checked="" type="checkbox"/> Disapprove _____ Date _____	Mark E. Yuska Chief, Operations Division YUSKA.MARK.E.1262733420 <small>Digitally signed by YUSKA.MARK.E.1262733420 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=YUSKA.MARK.E.1262733420 Date: 2018.05.30 08:39:09 -06'00'</small>
Approve <input checked="" type="checkbox"/> Disapprove _____ Date _____	Cheryl L. Connett Chief, Real Estate Division CONNETT.CHERYL.L.1231861358 <small>Digitally signed by CONNETT.CHERYL.L.1231861358 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=CONNETT.CHERYL.L.1231861358 Date: 2018.05.29 10:12:11 -07'00'</small>
Approve <input checked="" type="checkbox"/> Disapprove _____ Date <u>17 JUL 18</u>	Larry D. Caswell, Jr. Lieutenant Colonel, U.S. Army District Commander Digitally signed by CASWELL.LARRY.DALE.JR.1052433432 Date: 2018.07.17 21:49:31 -06'00'



# **EXECUTIVE SUMMARY**

## **John Martin Reservoir Master Plan**

### **U.S. Army Corps of Engineers**

Prepared by Albuquerque District and the Regional Planning and Environmental Center  
June 30, 2017

## **PURPOSE**

The revision of the *John Martin Reservoir Master Plan* (hereafter Plan or Master Plan) is a framework built collaboratively to guide appropriate stewardship of U.S. Army Corps of Engineers (USACE) administered resources at John Martin Reservoir over the next 25 years in accordance with federal regulations. The 1974 Master Plan for John Martin Reservoir was an update of the original 1947 Master Plan, serving well past its intended 25-year planning horizon. The authorized purposes for John Martin Reservoir are flood risk management, irrigation and water supply conservation, as well as a permanent pool established for recreation, fish and wildlife. USACE also has an inherent responsibility for environmental stewardship.

The 1974 Plan classified a total of 10,400 acres of land and 11,267 acres of surface water. Due to changes in landform and improvements in area measurement technology, John Martin Reservoir currently encompasses 10,650 acres of land and 11,484 acres of surface water [2017 Geographic Information System (GIS) calculation]. The dam and resulting reservoir protect developed areas in the Arkansas River Basin downstream of the dam through flood mitigation; provide water for irrigation, habitat for fish and wildlife conservation, and areas for public recreation. The Plan and supporting documentation provides an inventory, analysis, goals, objectives and recommendations for USACE lands and waters at John Martin Reservoir, Colorado.

## **PUBLIC INPUT**

To ensure a balance between operational, environmental, and recreational outcomes, USACE obtained public and agency input toward the Master Plan. USACE concurrently sought public input in compliance with the National Environmental Policy Act and completed an Environmental Assessment (EA) in conjunction with the Master Plan to evaluate the impacts of land use alternatives. The EA is included in Appendix B on the Plan.

Six individuals, not including USACE personnel, attended a public scoping meeting held at the onset of the master planning process on 27 October 2016 for John Martin Reservoir. One comment was received during the 30-day public comment period that followed. That comment was from the Colorado Division of Parks and Wildlife (CPW). The CPW manages the majority of the USACE lands at John Martin Reservoir, and USACE invited that agency to attend the land use alternatives workshop held 23 February 2017. The CPW also received an early pre-draft link to this Master Plan for further comment.

The final draft Master Plan and Environmental Assessment with the accompanying Finding of No Significant Impact (FONSI) was made available for public and agency review online beginning 09 February 2018 and remained open for public and agency review through 12 March 2018. Five comments were received during this time; lake staff, a private citizen, the Southern Ute Indian Tribe, Cheyenne & Arapaho Tribes, and CPW. The comments and USACE responses can be found in Table 7.1 of this Plan.

## RECOMMENDATIONS

The following land classification changes (detailed in Chapter 8, Table 8.1) were a result of the inventory, analysis, and synthesis of data, documents, and public and agency input. In general, 1,367 total acres were reclassified, with 73 acres of fee land added and 235 acres of conservation pool added due in part to siltation, erosion, and the use of GIS technology to measure acreages. The use of geo-spatial software allows for more finely tuned measurements and thus Master Plan acreages may vary slightly from official land acquisition records. Chapter 7 contains a detailed summary of comments and USACE responses.

**Table ES-1 Change from Prior Land Classification to New Land Classification**

Prior (1974) Land Classifications	Acres	New Land Classifications	Acres	Net Difference
Project Operations	438	Project Operations	514	76
Operations: Recreation – Intense Use	680	High Density Recreation	1,307	627
		Environmentally Sensitive Areas	227	227
Secondary Allocation to Low Density Recreation	1,213	Multiple Resource Management – Low Density Recreation		-1,213
Operations: Wildlife Management	8,246	Multiple Resource Management – Wildlife Management	8,602	356
Permanent pool	11,120	Permanent pool	11,484	235

**\*Note:** Acreage figures were measured using GIS technology and may vary from the official land acquisition records. Flowage easement lands are 4,976 acres

## PLAN ORGANIZATION

Chapter 1 of the Master Plan presents an introduction of John Martin Reservoir. Chapter 2 consists of an inventory and analysis of project resources. Chapters 3 and 4 lay out management goals, resource objectives, and land allocation and classification. Chapter 5 is the resource plan that identifies the management of USACE owned lands at John Martin Reservoir through a resource use plan for each land use classification. This includes current and projected park facility needs, an analysis of existing and

anticipated resource use, and anticipated influences on overall project operation and management. Chapter 6 details topics that are unique to John Martin Reservoir. Chapter 7 identifies the coordination efforts and stakeholder input gathered for the development of the Master Plan, and Chapter 8 gives a summary of the changes in land classification from the previous Master Plan to the present one. Finally, the appendices include information and supporting documents for the Master Plan revision, including land classification maps (Appendix A).

An EA analyzing alternative management scenarios for John Martin Reservoir has been prepared in accordance with the National Environmental Policy Act of 1969, as amended (NEPA); regulations of the Council on Environmental Quality; and USACE regulations, including Engineer Regulation (ER) 200-2-2: Procedures for Implementing NEPA. The EA is a separate document that informs the Master Plan's goals, objectives, and land uses, and can be found in its entirety in Appendix B.

The EA evaluated two alternatives as follows: 1) No Action Alternative, and 2) Proposed Action. The EA analyzed the potential impact that the No Action and Proposed Action alternatives would have on the natural, cultural, and human environments. Because the Master Plan is conceptual, any action proposed in the Plan that would result in significant disturbance to natural or cultural resources or result in significant public interest would require additional NEPA documentation at the time the action takes place.



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# JOHN MARTIN RESERVOIR MASTER PLAN

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# **CHAPTER 1 – INTRODUCTION**

## **1.1 PROJECT AUTHORIZATION**

The John Martin Dam and Reservoir, first named the Caddoa Dam and Reservoir, was authorized under the Flood Control Act of 1936 (P.L. 74-738) as amended by the Flood Control Act of 1938 (P.L. 75-761). The originally-authorized project purposes were flood control and conservation storage for irrigation water supply. The name of the project was changed to honor the late Congressmen from Colorado, John A. Martin (P.L. 76-667). The recommended construction of the dam and reservoir was described in House Document Number 308, 74<sup>th</sup> Congress, 1<sup>st</sup> Session. Further authority directed the Chief of Engineers to use 10,000 acre-feet (ac-ft) of flood control storage space in the reservoir to establish and maintain a permanent pool for fish and wildlife and recreational purposes. This can occur at such times as the storage space may be available for such a permanent pool within the conservation pool as defined in Article III F, Arkansas River Compact (63 Stat. 145). Conditions under which the permanent pool may be established and maintained are specified in this document, and it stipulates that the primary purposes of the project are not to be changed by newly authorized purposes.

General authorities also apply to public land and waters at John Martin Reservoir. Congress authorized the Chief of Engineers to construct, maintain and operate public park and recreational facilities on USACE-managed lands and waters in the Flood Control Act of 1944 (P.L. 78-534) and further amended by the Flood Control Act of 1962 (P.L. 87-874). The Land and Water Conservation Fund Act of 1965 provides further authority with regard to funding for recreational development (P.L. 88-578). In addition, the Fish and Wildlife Coordination Act of 1958 requires that fish and wildlife conservation receive consideration at all USACE water resources development projects (P.L. 85-624).

## **1.2 PROJECT PURPOSE**

John Martin Reservoir is a multipurpose water resources project operated by USACE, Albuquerque District. Originally constructed for the purpose of flood control and conservation storage for irrigation, the Project was later authorized to establish a permanent conservation pool, for recreation and fish and wildlife. The project seeks to balance the needs of the surrounding population and visitors with the protection of the project's cultural resources and ecological systems.

Environmental stewardship is a major responsibility and inherent mission in the administration of federally owned lands. Other laws including, but not limited to, the National Environmental Policy Act (NEPA, P.L. 91-190) the Forest Cover Act (P.L. 86-717), and the Fish and Wildlife Coordination Act (P.L. 85-624) place emphasis on the environmental stewardship of USACE-administered federal lands, respectively. This stewardship includes, among other laws, adherence to the Endangered Species Act of 1973, (Public Law 93-205), which protects imperiled species and the ecosystems upon which they depend.

John Martin Reservoir is designed and operated to mitigate flooding in the Arkansas River watershed on lands below the dam, based on a conservation pool of elevation below 3,851 feet, National Geodetic Vertical Datum (NGVD29). In addition to flood risk management, the Colorado and Kansas State governments signed the Arkansas River Compact in December 1948, which included a provision for the two states to have access to the river for water use, including John Martin Reservoir. In 1980, the states developed a plan allocating 60 percent of the reservoir's water to Colorado and 40 percent to Kansas.



**Figure 1.1 Vicinity Map of John Martin Reservoir**

### **1.3 MASTER PLAN PURPOSE AND SCOPE**

In accordance with ER 1130-2-550 Change 07, dated 30 January 2013 and Engineering Pamphlet (EP) 1130-2-550 Change 05, dated 30 January 2013, master plans are required for most USACE water resources development projects having a federally owned land base. The Master Plan is the long-term strategic land use management document that guides the comprehensive management and development of all the project's recreational, natural, and cultural resources. The revision of the 1974 John Martin Reservoir Master Plan is intended to bring the Master Plan up to date, reflecting current and future ecological, socio-demographic, and outdoor recreation trends relevant to the lake over the next 25-year planning horizon. The



Master Plan guides the efficient and cost-effective development, management, and use of project lands. The Plan is a dynamic tool that provides for the responsible stewardship and sustainability of the project's resources for the benefit of present and future generations.

The Master Plan works in tandem with the *Operational Management Plan* (OMP), which is the implementation tool for the resource objectives and development needs identified in the Master Plan. The Master Plan guides and articulates the USACE responsibilities pursuant to federal laws. The USACE vision for the future management of the natural resources and recreation program at John Martin Reservoir is set forth as follows:

*“The land, water and recreational resources of John Martin Reservoir will be managed to protect, conserve, and sustain natural and cultural resources, especially environmentally sensitive resources, and provide outdoor recreation opportunities that complement overall project purposes for the benefit of present and future generations.”*

It is important to note what the Master Plan does not address. The Master Plan does not address details of design, management and administration, or implementation. These aspects are addressed in the *John Martin Reservoir OMP*. In addition, the Master Plan does not address the specifics of regional water quality, shoreline management, or water level management, nor does it address the operation and maintenance of project operations facilities. The operation and maintenance of primary project operations facilities, including but not limited to the dam, spillway, and gate-controlled outlet, is not included in the Plan. Additionally, the Plan does not address the flood risk management or water conservation purposes of John Martin Reservoir (see the USACE *Water Control Manual* for John Martin Reservoir for a description of these project purposes.)

The master planning process encompasses the examination and analysis of past, present, and future environmental, recreational, and socioeconomic conditions and trends. With a generalized conceptual framework, the process focuses on the following four primary components:

- Regional and ecosystem needs
- Project resource capabilities and suitabilities
- Expressed public interests that are compatible with John Martin Reservoir's authorized purposes
- Environmental sustainability elements

The John Martin Reservoir Master Plan, originally published in 1947 then revised in 1974 as Design Memorandum (DM) 1, and amended in June of 1980, was sufficient for prior land use planning and management, but many changes are affecting the region. Outdoor recreation trends, regional land use, population, current legislative requirements and USACE management policy have evolved. Increased urbanization, fragmentation of wildlife habitat, impacts of climate change, and the growing demand for recreational access and natural resources management has affected the region and John Martin Reservoir. In response to these escalating pressures, a full revision of the 1974 Master Plan is required. The Master Plan revision will update land classifications, plan for the modernization of existing parks, and inform the management of wildlife and other resource lands for the next 25 years.

## 1.4 BRIEF WATERSHED AND PROJECT DESCRIPTION

John Martin Reservoir lies in the Arkansas River basin, which has a drainage area of 18,130 square miles above the dam. The Arkansas River has become a perennial river with highly fluctuating annual and seasonal flows due to varying amounts of spring runoff from snow-pack in the mountains, large seasonal rain events, and droughts. Today, the river is highly regulated for agricultural purposes, and the John Martin Reservoir is a temporary storage facility for the conservation of irrigation water.

Construction at John Martin Dam Project began in 1939 with the relocation of approximately 20 miles of the Atchison, Topeka, and Santa Fe Railway tracks. Dam construction began in August 1940, but work was suspended in the spring of 1943 due to World War II. Construction resumed in the spring of 1946 and the project was completed in October 1948.



**Photo 1.1 John Martin Dam** (USACE Photo)

## 1.5 DESCRIPTION OF RESERVOIR

The lake and all associated federal land are located within Bent County, Colorado. The reservoir at its maximum design water surface elevation of 3,870 feet is 14.8 miles long with an average width of 1.9 miles and a water surface of 17,151 acres with a storage capacity of 615,500 ac ft. The reservoir at the top of the conservation pool of 3,851 feet is 11.8 miles long with an average width of 1.5 miles. As of the 2013 Sedimentation Survey, the conservation pool surface area is 11,484 acres and storage capacity is 330,703 ac ft. At elevation 3,783 feet, no water is stored for water supply. A sediment space allocation was not made during

design studies. A recreation pool was added with water purchased in 1979 by Bent and Prowers Counties.

## 1.6 PROJECT ACCESS

John Martin Reservoir can be accessed from Lamar and Las Animas via U.S. Highway 50 to the town of Hasty, Colorado, and then two miles south on Colorado State Highway 24. Several smaller paved and unpaved roads near the lake give access to other areas of the reservoir, including County Road Ff. 5, which runs along the southern border of the area.

National USACE policy set forth in *ER 1130-2-550*, Appendix H, states that USACE lands will, in most cases, only be made available for roads that are regional arterials or freeways (as defined in *ER 1130-2-550*). All other types of proposed roads, including driveways and alleys, are generally not permitted on USACE lands. The proposed expansion or widening of existing roadways on USACE lands will be considered on a case-by-case basis.

The Colorado Department of Transportation (CODOT) developed the 2040 Regional Transportation Plans (RTP) in tandem with the Statewide Transportation Plan. John Martin Reservoir is located within the Southeast Transportation Planning Region (TPR) whose plan was completed in February 2015. According to the RTP, “the purpose of the Southeast TPR’s RTP is to provide guidance and direction related to the regional transportation vision, needs, and priorities.” The plan identified Regional Priority Corridors which are corridors that have a high importance to the region’s transportation system or have a need for near-term improvements. Three such corridors were identified in the Southeast RTP, (A) SH 96 from Pueblo/Crowley county line to the Kansas state line, (B) US 50 from I-25 in Pueblo to the Kansas state line, and (C) US 287 from Oklahoma state line to the Kiowa/Cheyenne county line, (see Figure 1.2). Two of the three priority corridors are in close proximity to John Martin Reservoir, with US 50 being the primary access route to the project. No future projects are defined in the plan for the US 50 corridor but the plan outlines the following goals and strategies:

- Accommodate increases in freight and tourist/recreation traffic
- Increase safety and local mobility
- Support economic development, maintain environmental quality
- Provide regional bus service



**Figure 1.2 Southeast TPR Regional Corridors**  
(Source: CDOT, 2040 Regional Transportation Plan, February 2015)

## 1.7 PERTINENT PUBLIC LAWS

Numerous public laws apply directly or indirectly to the management of Federal land at John Martin Reservoir. Listed below are several key public laws that are most frequently referenced in planning and operational documents. Refer to Appendix D for a more comprehensive listing.

- Public Law 78-534, Flood Control Act of 1944. - Section 4 of the Act as last amended in 1962 by Section 207 of Public Law 87-874 authorizes USACE to construct, maintain, and operate public parks and recreational facilities in reservoir areas and to grant leases and licenses for lands, including facilities, preferably to Federal, State or local governmental agencies.
- Public Law 85-624, Fish and Wildlife Coordination Act 1958. – The FWCA as amended in 1965 sets down the general policy that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resource development programs. Opportunities for improving fish and wildlife resources

and adverse effects on these resources shall be examined along with other purposes which might be served by water resources development.

- Public Law 86-717, Forest Conservation Act. - This Act provides for the protection of forest and other vegetative cover for reservoir areas under the jurisdiction of USACE.
- Public Law 89-665, National Historic Preservation Act of 1966 (NHPA) (15 October 1966). Establishes a national policy of preserving, restoring, and maintaining cultural resources. It requires Federal agencies to take into account the effect an action may have on sites that may be eligible for inclusion on the National Register of Historic Places.
- Public Law 89-72, Federal Water Project Recreation Act of 1965. - This Act requires that not less than one-half the separable costs of developing recreational facilities and all operation and maintenance costs at Federal reservoir projects shall be borne by a non-Federal public body. A HQUSACE/OMB implementation policy made these provisions applicable to projects completed prior to 1965.
- Public Law 91-190, National Environmental Policy Act of 1969. - NEPA declared it a national policy to encourage productive and enjoyable harmony between man and his environment, and for other purposes. Specifically, it declared a “continuing policy of the Federal Government...to use all practicable means and measures...to foster and promote the general welfare, to create conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.” Section 102 authorized and directed that, to the fullest extent possible, the policies, regulations and public law of the United States shall be interpreted and administered in accordance with the policies of the Act. It is Section 102 that requires consideration of environmental impacts associated with Federal actions. Section 101 of NEPA requires the federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony.

Specifically, Section 101 of the National Environmental Policy Act declares:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
  - Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
  - Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
  - Preserve important historic, cultural, and natural aspects of our national heritage and maintain wherever possible an environment which supports diversity and variety of individual choice;
  - Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities, and
  - Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.
- Public Law 101-601, Native American Graves Protection and Repatriation Act (16 November 1990). Requires Federal agencies to return Native American human remains

and cultural items, including funerary objects and sacred objects, to their respective peoples.

## **1.8 PRIOR DESIGN MEMORANDA**

Design Memorandums (DM) were prepared from 1956 thru 1970 setting forth design criteria for all aspects of the project including the prime flood risk management facilities, real estate acquisition, road and utility relocations, reservoir clearing, and the master plan for recreation development and land management. The DM's for John Martin Reservoir include DM No. 1 - 1974 Master Plan and DM No. 9 - Fort Lyon Protective Works.

## **1.9 REAL ESTATE**

### 1.9.1 Project Land Acquisition

The Federal lands at John Martin Reservoir were acquired under the Pre-1953 Land Acquisition Policy. This policy dictated that necessary land acquisition would be largely determined on a case-by-case basis. However, the policy in general was to obtain fee title to lands up to the full pool elevation level of the reservoir. Additional lands needed for operations or for other authorized purposes were also acquired in fee. Total project area at John Martin Reservoir encompasses 25,443.21 acres in land, water and easement. Of this total area, 20,467 acres were acquired in fee simple title by USACE. Above the area acquired in fee simple title, 4,976 acres of land were encumbered as a perpetual flowage easement (USACE OMBIL.)

Prospective buyers of property adjacent to John Martin Reservoir are strongly encouraged to determine the location of the flowage easement line on any property they are considering purchasing. Flowage easements may or may not be located on deeds or plats provided by the seller(s).

Individuals and entities interested in leases to provide services to the public on Federal Government fee lands should be aware that there are specific restrictions and procedures they must follow. In many cases, individuals or companies will be encouraged to pursue a sublease with an existing lessee. Leases to commercial entities for new recreational services are subject to a competitive bidding process after completion of a market study and determination by the Government that the prospective service or product would be beneficial to users at John Martin Reservoir. Leases to governmental entities are not subject to competitive bidding. Questions regarding this topic can be directed to the lake office at 29955 County Rd 25.75, Hasty, CO 81044.

### 1.9.2 Encroachments and Trespass

Federal Government property is monitored by USACE to identify and correct instances of unauthorized use, including trespasses and encroachments. The term "trespass" includes unauthorized transient use and occupancy, such as mowing, tree cutting and removal, livestock grazing, cultivation and harvesting crops, and any other alteration to Government property done without USACE approval. Unauthorized trespasses may result in a Title 36 citation to appear in Federal Magistrate Court, which could subject the violator to fines or imprisonment (See 36 C.F.R. Part 327 Rules and Regulations Governing Public Use of Water



Resources Development Projects Administered by the Chief of Engineers). More serious trespasses will be referred to the USACE Office of Counsel for enforcement under state and federal law, which may require restoration of the premises and collection of monetary damages.

The term “encroachment” pertains to an unauthorized structure or improvement on Federal Government property. When encroachments are discovered, lake personnel will attempt to resolve the issue at the project level. Where no resolution is reached, or where the encroachment is a permanent structure, the method of resolution will be determined by Real Estate Division, with recommendations from Operations Division and Office of Counsel. USACE’s general policy is to require removal of encroachments, restoration of the premises, and collection of appropriate administrative costs and fair market value for the term of the unauthorized use.

### 1.9.3 Outgrants

At present, there are 18 outgrants on John Martin Reservoir. Of these, 16 are for roads and utilities. The two remaining outgrants are with the State of Colorado: one is a lease for Public Parks and Recreation, currently with Colorado Parks and Wildlife (CPW), and the other is a license issued to the Colorado State Department of Game and Fish, now CPW, for wildlife management, and recreation. Recreational outgrants are discussed further in Section 5.3.

Personnel of the Albuquerque District Real Estate Division, in coordination with Operations Division staff at John Martin Reservoir, conduct compliance inspections of major outgrants, including concessions, public parks, and wildlife areas annually in accordance with applicable regulations.



**Photo 1.2 John Martin Reservoir Dam Road** (USACE Photo)

## 1.10 PERTINENT PROJECT INFORMATION

Pertinent project information reflects the elevation, area, and capacity of the John Martin Reservoir and dam as it was constructed. USACE dredged around the outlet works in early 2006, completed a bathymetric survey of the reservoir in March 2006, and completed an aerial survey of the “out of water” areas in 2009. USACE completed the sedimentation resurvey report in 2013, which included a new elevation-area-capacity table. This elevation-area-capacity table was implemented in November of 2013. Table 1.1 provides pertinent information regarding existing reservoir storage capacity at John Martin Reservoir, as well as data on sedimentation from the 2009 survey.

**Table 1.1 Water Storage Capacity**

Feature	Elevation (feet NGVD)	Area (acres)	Capacity (ac-ft)
Top of Dam	3,880	20,516	788,104
Top of Flood Control Storage	3,870	17,151	599,852
Spillway Crest	3,840	8,842	219,869
Top of Conservation Pool*	3,851	11,484	330,703
Drainage Area 18,130 square miles			
Zero Storage	3,783		
Conduit Invert	3,766		
Streambed Elevation	3,765		
Maximum Permanent Pool Capacity (10,000 ac-ft. of permanent pool may extend into flood pool)			15,000

One inch of runoff equals 966,933 ac-ft.

Vertical Data – NGVD 1929

Total sediment deposition to date 101,923 ac-ft. (2009 Survey)

Source: USACE – "Area and Capacity Tables, John Martin Reservoir, Arkansas River Basin, Colorado", U.S. Army Corps of Engineers, Albuquerque District, New Mexico, dated November 2013.

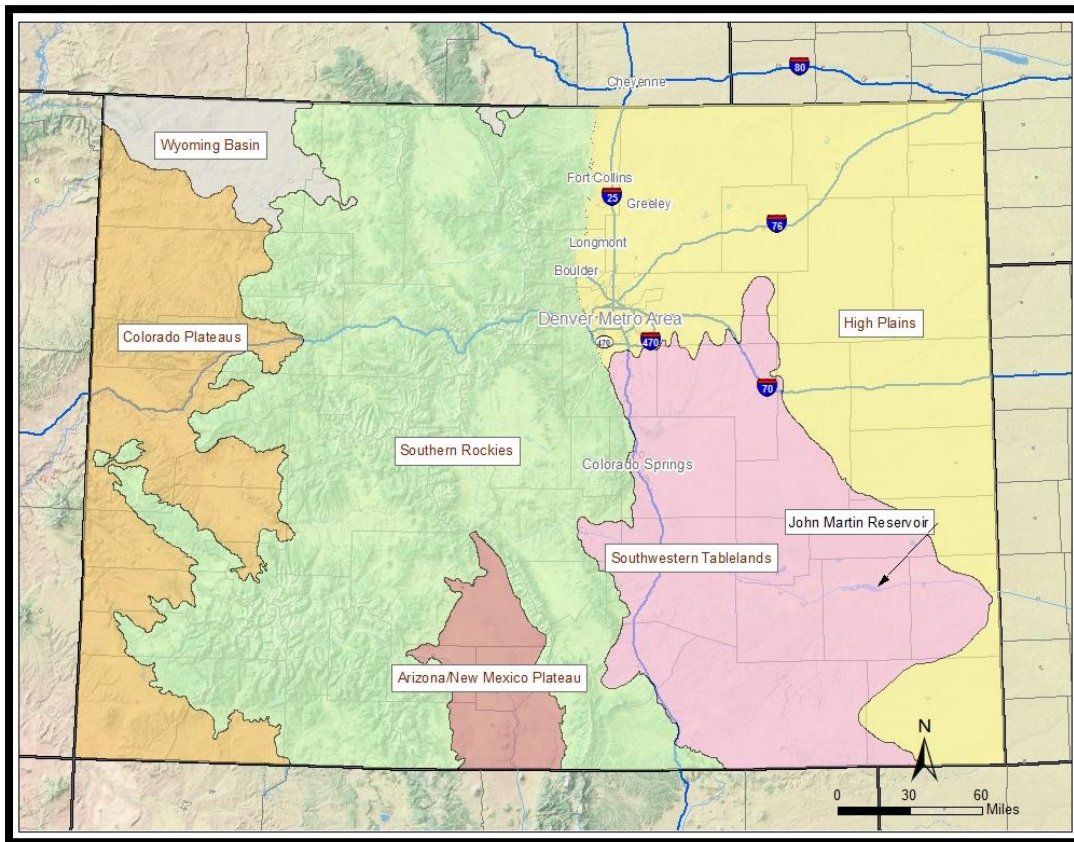


## CHAPTER 2 - PROJECT SETTING AND FACTORS INFLUENCING MANAGEMENT AND DEVELOPMENT

### 2.1 PHYSIOGRAPHIC SETTING

#### 2.1.1 Ecoregion Overview

John Martin Reservoir lies within the Southwestern Tablelands (Level III) between the ecoregions of the Piedmont Plains and Tablelands (Level IV) on the north, and Sand Sheets (Level IV) on the south, and is the transition between the Southern Rocky Mountain and Western High Plains ecoregions. It is a land of flat to gently rolling uplands with a few shallow tributary valleys. Soils are usually calcareous loam, loamy sand, and fine sand, belonging to the Bankard soil series. Elevations range from approximately 3,750 feet to over 4,200 feet above NGVD29. The Southwest Tablelands ecoregion is characterized as mid-grass prairie consisting primarily of buffalo and grama grasses, and sagebrush.



**Figure 2.1 Level III Ecoregions of Colorado** (Source: Environmental Protection Agency)

The Piedmont Plains and Tablelands ecoregion is a vast area of irregular and dissected plains underlain with shale and sandstone. Natural vegetation is shortgrass prairie, where land use is mostly rangeland and irrigated agriculture. The Sand Sheets ecoregion has rolling plains with stabilized sand sheets and areas of low sand dunes. Soils are formed from wind-

deposited and alluvial sand. Natural vegetation is primarily sandsage prairie and landuse in this area is mainly rangeland.

2.1.2 Climate

The USACE lake missions of flood risk management, water supply, fish and wildlife, and recreation all serve to protect the built and natural resources of a region from the climate extremes of drought and floods. This creates a more resilient and sustainable region for the health, welfare, and energy security of its citizens. Maintaining a healthy vegetative cover and tree canopy on Federal lands within the constraints imposed by primary project purposes helps reduce stormwater runoff and soil erosion, mitigates air pollution, and moderates temperatures. The USACE Strategic Sustainability Performance Plan implements EO 13693, stating:

*“As a prominent Federal entity, a key participant in the use and management of many of the Nation’s water resources, a critical team member in the design, construction, and management of military and civil infrastructure, and responsible members of the Nation’s citizenry, the USACE strives to protect, sustain, and improve the natural and manmade environment of our Nation and is committed to sustainability and compliance with applicable environmental and energy statutes, regulations and Executive Orders.*

*Sustainability is...a natural part of the USACE decision processes, [and is a] part of our organizational culture. USACE is a steward for some of the Nation’s most important natural resources and we must ensure our stakeholders and partners receive products and services that provide for sustainable solutions that address short and long-term environmental, social, and economic considerations.”*

The climate of Bent County is characterized as semi-arid/continental with low and variable precipitation, low humidity, and a wide seasonal range in temperature. The average low and high temperatures range from 15 degrees Fahrenheit (°F) in January to 95°F in July. The lowest minimum-recorded temperature was -17°F and the highest maximum was 111°F. The average frost-free period is 160 days but this can vary significantly from year to year. The average first freeze occurs in early October and the average last freeze occurs in late April.

Table 2.1 Temperature and Precipitation

Temperature Period of Record (1940 – 2009)	
Average Low January Temperature	15°F
Average High July Temperature	95°F
Record Temperatures	
Record Low Temperature	-17°F
Record High Temperature	111°F

(Source: US Climate Data)

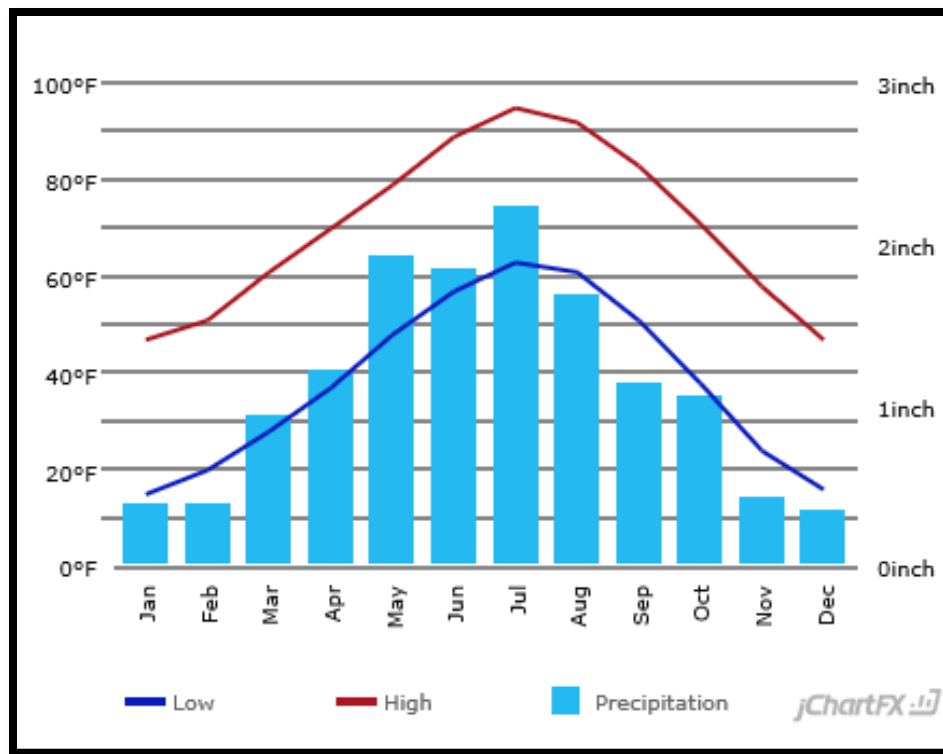
This area experiences extremes in drought and inundation, as well as significant hail events. Bent county was designated a disaster area in July 2014 due to a massive hailstorm that destroyed crops. In April 2011, a wildfire, started by lightning, burned 14,000 acres. Bent County has experienced major flooding in 1921, 1936, 1955, 1957, and 1965.

**Table 2.2 Average Monthly and Annual Rainfall**

	Average Rainfall	Percent of Average Annual Rainfall
Month	Inches <sup>(1)</sup>	
Jan	.44	3%
Feb	.48	3%
Mar	.87	5%
Apr	1.32	8%
May	2.12	13%
Jun	2.39	15%
Jul	2.36	15%
Aug	2.51	16%
Sep	1.35	9%
Oct	1.01	6%
Nov	.52	3%
Dec	.47	3%
TOTAL	15.84	

Annual precipitation within the county averages 16 inches of rain per year, with the highest rainfall typically occurring from May through August. Annual average snowfall in the area is 19 inches and is an insignificant source of moisture. The area experiences 259 sunny days throughout the year, and relative humidity ranges from 38 percent to 94 percent, with the driest period around late July and the most humid period in early May. The prevailing surface winds are southerly, with strong winds from the north occurring frequently in winter months. In a typical year, wind speeds vary from 0 to 17 mph and rarely exceed 25 mph, with periods of high winds occurring late February through April.

The NRCS monitors snowpack and other climactic conditions and provides the data to others. NRCS disseminates data, forecasts and products. Products include snowpack summaries, reports, maps, and data tables. They issue monthly water supply forecasts for the river systems from January until June. In 2017, the Arkansas Basin snowmelt runoff was above average throughout the entire basin. As of May 1st, the basin wide snowpack was above average, at 115% of the median, with the Upper Arkansas Basin reporting 130% of median. At John Martin Dam, maximum inflow was 6,068 cubic feet per second (cfs) on 16 May 2017, storage peaked at 265,939 acre-feet (3,845 feet) on 27 June, and the maximum release was about 1478.0 cfs on 16 June.



**Figure 2.2 Weather Graph** (Source: US Climate Data)

### 2.1.3 Geology

The basic geologic formations exposed along the Arkansas River Valley at John Martin Dam are Cretaceous sedimentary rock deposits that slowly dips to the north-northeast. Most of the dam site is within the Lower Cretaceous Dakota sandstone formation that is inter-bedded with various shales. Graneros shale, an Upper Cretaceous sandy shale member of the Benton formation, also underlies part of the north wing of the dam.

The rocks in the vicinity of John Martin Reservoir are sandstone, shales, and limestones. These rocks were deposited in sediments in the shallow seas of the Cretaceous period. The alluvia composing the flood plain of the Arkansas River and the terrace deposits of sand and gravel on the bench north of the flood plain are Quaternary in age.

The majority of the dam site is in the Dakota formation, with a small portion in the Benton formations. This is one of the important aquifers in the regions. A stream-cut terrace exposes the Dakota formation along the north side of the reservoir for some distance upstream from the dam.

The Graneros shale of the Benton formation overlies the Dakota formation and outcrops on top of the north abutment a short distance back from the escarpment. Underlying part of the north wing of the dam, it is covered with unconsolidated terrace gravels of Quaternary alluvium consisting of sands, gravels, boulders, silt, and clay.

The upland along the north bank of the river throughout the length of the reservoir is covered with windblown sands, generally in dune form. Most of the dunes are overgrown with vegetation and are no longer migratory.

The Arkansas River's present erosion level is formed by its broad floodplain, while terrace gravels and buried channels cut into the Dakota sandstone under the floodplain represent older erosion levels. These evidences of differing erosion levels indicate that the present aggradation of the valley is but one stage of its frequently interrupted life cycle.

#### 2.1.4 Topography

John Martin Reservoir lies within the High Plains section of the Great Plains Physiographic Province. The region is characterized by flat to gently rolling uplands with a few shallow tributary valleys. There is relatively little topographic relief, and elevations in the area vary from approximately 3,750 feet in the river's flood plain below the dam to about 4,200 feet on hilltops several miles to the north.

#### 2.1.5 Hydrology and Groundwater

The permeable alluvium materials of the Arkansas River Valley in Bent County constitute a valley-fill groundwater aquifer that ranges from one to five miles wide and up to 60 feet deep. The aquifer is recharged by infiltration of precipitation and applied irrigation water. A brief description of the watershed is given in section 1.4 above.

The Pueblo-Holly sector of the Arkansas Valley is situated in the drainage basin of the Arkansas River. The river receives tributary streams in the mountains that are permanent feeders. The stream receives tributaries that are intermittent feeders once the river leaves the mountainous area at Pueblo.

The Arkansas River has an irregular regime over time and space as it descends from the mountains, and the stream discharge is highly variable. From the end of September until the middle of April, the flow is low. From late spring to early summer, the runoff from melting snowpack causes the river to be full to overflowing.

Several intermittent streams feed the Arkansas River, discharging their largest volume of water during late spring and early summer. Precipitation in the drainage basins of the tributary streams contribute to the runoff from the mountain area, causing irrigation ditches and canals to fill and overflow. This can cause damage to bridges, roads and infrastructure, as well as contribute to large quantities of silt to deposit in the irrigation canals and reservoir.

#### 2.1.6 Soils

Soils in the Arkansas River Valley near John Martin Reservoir have been categorized as the Las-Apishapa-Bankard and the Las-Glendive Associations for Bent County. These soils occupy the low-lying flood plain, bottom lands, and nearby terraces along the river. Some of the soils are clayey and poorly drained while others are loamy to sandy and are well to excessively drained and highly erodible.

A soil survey by the Natural Resource Conservation Service (NRCS) shows there are four out of the eight possible general classifications (Classes I through Class VIII) occurring in the reservoir area. The erosion hazards and limitations for use increase as the class number increases. Class I has few limitations, whereas Class VIII has many. The soil class data for project lands is provided in Table 2.3. This data is compiled by the NRCS and is a standard component of natural resources inventories on USACE lands. This, and other inventory data, is recorded in the USACE Operations and Maintenance Business Information Link (OMBIL).

**Table 2.3 Soil Classes**

Soil Class	Acreage
<b>Class I</b>	0.0
<b>Class II</b>	0.0
<b>Class III</b>	0.0
<b>Class IV</b>	786
<b>Class V</b>	0.0
<b>Class VI</b>	5,544
<b>Class VII</b>	1,953
<b>Class VIII</b>	646

A general description of the soils at John Martin Reservoir and the land capability classes are described below. Detailed information on all soil types surrounding John Martin Reservoir is available on websites maintained by the NRCS, U.S. Department of Agriculture.

- *Class I* soils have slight limitations that restrict their use.
- *Class II* soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.
- *Class III* soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.
- *Class IV* soils have very severe limitations that restrict the choice of plants or require very careful management, or both.
- *Class V* soils have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forestland, or wildlife food and cover.
- *Class VI* soils have severe limitations that make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forestland, or wildlife food and cover.
- *Class VII* soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.
- *Class VIII* soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for aesthetic purposes.

Surface drainage of the land is generally good. Sufficient slope provides for good surface runoff. Surface drainage on bottomlands is sufficient, though its upland counterpart has better drainage. Sufficient slope exists eastward and toward the river channel, which with the aid of frequent intersecting watercourses, affords an outlet for surface water. Only a small number of areas exists where water does not drain off readily.

Underdrainage of the irrigated land has been a major problem, related to the geologic structure. On the terraced land, there is sufficient depth of gravel or sufficiently pervious



subsoil above the underlying impervious deposits to produce free sub-drainage. In this area, the land is comparatively free of alkali and artificial drainage is confined to a few small scattered tracts on the bottomlands and on the terraces.

Drainage difficulties of a serious nature prevail on the intermediate slope land. Mature soils have formed on impervious deposits near Las Animas on the north side of the river, and again near Holly and Lamar. Without pervious subsoil or a gravelly substratum, underdrainage is poorly developed. Large areas are unsuitable for crop production as a result of seepage and alkali.

## 2.2 ECOREGION AND NATURAL RESOURCE ANALYSIS

### 2.2.1 Vegetative Resources

The Arkansas River valley lies within the Southwestern Tablelands ecoregion that is transitional between the Southern Rocky Mountain and Western High Plains ecoregions. The native plant community outside the Arkansas River flood plain is comprised of short prairie grasses that are utilized primarily as rangeland for grazing livestock, although there is also a significant amount of dryland farming. Common prairie grass species include blue grama, side-oats grama, buffalo grass, galleta, alkali sacaton, sand dropseed, western wheatgrass, and three-awn. Throughout the lower Arkansas River Valley and below the irrigation canals, agricultural land predominates, often directly abutting the restricted riparian corridor and river channel although much of the irrigated cropland north of John Martin Reservoir has been converted to either dry land farming or re-vegetated due to dry-up requirements. Significant natural resources work has been done over the past 10 years at John Martin Reservoir, including an extensive vegetative mapping survey as part of a Level 1 inventory in year, which was used to inform the GIS maps for this report.

**Table 2.4 Vegetation Classification and Condition 2015 Inventory**

Division	Order	Class	Sub-Class	Total Sub-Class Acreage	Sustainable Areas	Transitioning Acres	Degraded Acres	Total Conditioned Acres
VEGETATED	Herb Dominated	Herbaceous Vegetation	Annual graminoid or forb	120	120	0	0	120
VEGETATED	Tree dominated	Open tree canopy	Deciduous open tree canopy	1734	1734	0	0	1734
VEGETATED	Herb dominated	Herbaceous vegetation	Annual graminoid or forb vegetation	640	640	0	0	640
VEGETATED	Herb dominated	Herbaceous vegetation	Perennial graminoid vegetation (grass)	7371	7371	0	0	7371
VEGETATED	Vegetation not dominant	Sparse vegetation	Unconsolidated material sparse vegetation	187	187	0	0	187
VEGETATED	Vegetation not dominant	Sparse vegetation	Boulder, gravel, cobble, or talus sparse vegetation	150	150	0	0	150
JOHN MARTIN RESERVOIR TOTALS								10,202

Note: Classification information derived from the National Vegetation Classification System

Historically, riparian vegetation along the Arkansas River consisted of plains cottonwood, sandbar willow and, less extensively, peach-leaf willow. The cottonwoods, some of which grew to great sizes, grew in dispersed groves along the banks and on islands in the river, and lacked a shrub understory. In a few locations sandhill plum, wild grapes, and other shrubby species also occurred.

Important vegetation types at John Martin Reservoir include shortgrass prairie, sandhills, and riparian habitat. In addition, the sandy shoreline of the lake is nesting habitat for the Interior Least Tern and Piping Plover, both federally-listed bird species. These birds require sandy banks and shallow shoreline areas for foraging and nesting. Most of the shoreline around John Martin Reservoir has been identified as such habitat, and a majority of this habitat is on Federal property administered by USACE.

### 2.2.2 Wetlands

Wetlands are areas where water covers the soil or is present either at or near the surface of the soil all year or for varying periods during growing season. Water saturation (hydrology) largely determines how the soil develops and the types of plant and animal communities living in and on the soil.

The National Wetland Inventory (NWI) maps prepared by the U. S. Fish and Wildlife Service (USFWS) are available in the Wetland Mapper tool on the USFWS website show that 100 percent of the Upper Arkansas-John Martin Reservoir sub-basin has been digitally mapped by NWI, and that CPW has mapped 37 percent of the riparian system. The wetland landscape integrity shows generally little stress on the wetlands at John Martin Reservoir, with only 17 percent of the basin in High Stress and 12% in Severe Stress. However, as explained by the USFWS regarding use of the NWI map data, the data represents reconnaissance level mapping using high altitude imagery. The actual presence and boundaries of wetlands shown on NWI maps requires verification through detailed, on-the-ground inspection.





**Photo 2.1 Photo of typical vegetation at John Martin** (USACE Photo)

In accordance with national USACE policy, wetlands at operational projects are inventoried using the protocol established by USFWS in their *Classification of Wetlands and Deepwater Habitats of the United States*. The current USACE inventory for John Martin Reservoir indicates there are 20 wetlands located on USACE owned property.

### 2.2.3 Fish and Wildlife Resources

John Martin Reservoir provides habitat for a wide variety of game and non-game species of fish and wildlife, including migratory game birds, song birds, wading birds, reptiles, amphibians, and insects. Typical wildlife at John Martin Reservoir includes small mammals such as bats, squirrels, mice, gophers, rats, rabbits, badgers, raccoons, foxes, long-tailed weasels, and skunks. Other mammals include coyote, bobcat, and large mammals such as whitetail and mule deer. Resident and migratory songbirds include species such as Western meadowlark, mourning dove, scaled quail, common raven, turkey vulture, great horned owl, red-tailed hawk, American kestrel, snow and Canada geese, a variety of ducks, gulls, and shorebirds. Reptiles and amphibians include tiger salamanders, western spadefoot, Great Plains toad, bullfrog, ornate box turtle, short horned lizard, western collared lizard, western garter snake, western hognose snake, and prairie rattlesnake. In all, the area is home to approximately 35 species of mammals, 180 species of birds, and 30 species of amphibians and reptiles.



**Photo 2.2 Wildlife at John Martin Reservoir** (USACE Photo)

John Martin State Wildlife Area (SWA) is managed to provide production and harvest for game species including whitetail deer, mule deer, ducks, geese, ring neck pheasants, bobwhite quail, scaled quail, mourning dove, turkey, rabbit, and warm water fishes. An important management effort specific to John Martin SWA in regards to game species is the designation of the waterfowl resting area from November 1st through the end of the regular waterfowl season each year (roughly mid-February). This establishes an area along the shoreline and part of the surface area on the reservoir that is closed to all public access.

John Martin Reservoir State Park and surrounding Bent County is one of the premier birding locations in the interior United States, and is recognized nationally as an “Important Bird Area” through an international program administered in the United States by the Audubon Society. The majority of birds in Bent County are found within the boundaries of John Martin Reservoir. A checklist of birds that can be seen at John Martin Reservoir is available from CPW.

The fishery at John Martin Reservoir continues to be one of the most important along the lower Arkansas Valley, particularly with the loss of other large reservoirs due to continued drought conditions. The reservoir provides habitat for an abundance of fish species, with fishing opportunities for both boaters and bank anglers alike. Stocked species include black crappie, blue catfish, cahneel catfish, flathead catfish, largemouth bass, sauger, saugeye, smallmouth bass, walleye, and wiper. Native species include black bullhead, channel catfish, fathead minnow, green sunfish, orange spotted sunfish, plains killifish, red shiner and white sucker. The Winter Water Storage Program, which benefits the fishery, maintains normal reservoir operations that result in springtime storage maximum, followed by drawdown during



the irrigation, and refill during the winter months. However, the drought period between 2006 and 2011 resulted in reduced reproduction of white bass and crappie, lowering success rates on fry stocking.

#### 2.2.4 Threatened and Endangered Species

Section 7(a)(2) of the *Endangered Species Act* requires federal agencies to ensure that any action authorized, funded, or carried out by such agency is not likely to: (1) jeopardize the continued existence of any endangered or threatened species or (2) result in the destruction or adverse modification of critical habitat. The phrase, "jeopardize the continued existence of", means to reduce appreciably the likelihood of both the survival and recovery of listed species in the wild by reducing the species' reproduction, numbers, or distribution. Jeopardy opinions must present reasonable evidence that the project will jeopardize the continued existence of the listed species or result in destruction or adverse modification of critical habitat.



**Photo 2.3 Habitat at John Martin Reservoir for Listed Birds** (USACE Photo)

According to the Trust Resources Report (Consultation Code: 02ETAU00-2016-SLI-0405) generated by the USFWS web-based Information for Planning and Conservation tool, the federally-listed species with potential to occur on federal property at John Martin Reservoir include one endangered species and one threatened species of bird. These species are listed in Error! Reference source not found. Appendix C contains the most recent Trust Resources Report for John Martin Reservoir. The Bald Eagle has the potential to occur at John Martin

Reservoir and was formerly listed by the USFWS as an endangered or threatened species. Although recently delisted, the Bald Eagle is provided specific protections under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c).

**Table 2.5 Threatened and Endangered Species at John Martin Reservoir with Potential to Occur**

Common Name	Scientific Name	Federal Status	State Status	Occurrence
<b>Birds</b>				
Interior least tern	<i>Sterna antillarum</i>	Endangered	Endangered	Nesting
Piping plover	<i>Charadrius melodus</i>	Threatened	Threatened	Nesting

Bent County is home to several federally-listed endangered species. While some of them have the potential to occur within federal property, only two species exist at John Martin Reservoir and are subject to special consideration and protection. These are the endangered Interior Least Tern and threatened Piping Plover, both of which nest along the sandy shores of the Reservoir. Section 6.1 contains additional details concerning these two species

In addition to the federally-listed species for John Martin Reservoir, CPW maintains lists by ecoregion for Species of Greatest Conservation Need and associated general habitat requirements (Appendix C) for each species. The list for the Colorado Piedmont Ecoregion is available at [www.cpw.state.co.us](http://www.cpw.state.co.us). Many of the species on the list, particularly migratory songbirds, are known to utilize habitat at John Martin Reservoir on a regular basis and are considered in management plans.

### 2.2.5 Invasive Species

Invasive species are any kind of living organism, which if uncontrolled, causes harm to the environment, economy, or human health. Invasive species generally grow and reproduce quickly, and spread aggressively. Non-native (exotic) species have been introduced either intentionally or unintentionally, and can out-compete native species for resources or otherwise alter the ecosystem. Native invasive species are those species that spread aggressively due to an alteration in the ecosystem, such as lack of fire or the removal of a predator from the food chain. Table 2.6 lists invasive species that occur on the John Martin Reservoir.

According to the Natural Resource Management objectives in Chapter 3 of the Master Plan, USACE will work with its managing partners to monitor lands and waters for invasive, non-native, and aggressively spreading native species. USACE will take action to (1) prevent and/or reduce the spread of those species along with implementing prescribed fire as a management tool to control the spread of noxious plants and (2) to promote the vigor of native prairie grasses and forbs.

**Table 2.6 Invasive Species at John Martin Reservoir**

Species Group	Common Names	Scientific Name	Acreage Impacted
<b>Plant</b>			
Terrestrial plant	kochia	<i>Kochia scoparia</i>	1,500
Terrestrial plant	Russian thistle	<i>Salsolad Longifolia</i>	10,000
Terrestrial plant	Tamarix	<i>Tamarix chinensis</i>	1,400
Terrestrial plant	Small flower tamarix	<i>Tamarix parviflora</i>	1,500
Terrestrial plant	Russian olive	<i>Elaeagnus angustifolia</i>	600
Terrestrial plant	Canada thistle	<i>Cirsium arvense</i>	5,000
<b>Animal</b>			
Aquatic and wetland animals	Common carp	<i>Cyprinus carpio</i>	15

Source: USACE

In addition to the above species, there are a number of potential invasive species of concern identified by USACE staff and the CPW. These include the zebra and quagga mussels and the white-nose syndrome affecting bats. Monitoring for these threats is a cooperative effort between CPW and USACE. An Invasive Species Plan is currently being drafted by USACE and is expect to be completed in 2019. Invasive species are most often introduced by the the ebb and flow of the lakes and supporting rivers and streams. Direct introduction can occur when invasive species are unintentionally brought to an area by visitors. CPW's vessel inspection program is a deterrent to the introduction of aquatic invasive species. While uplands are typically more sustainable in terms of invasive plant species, lowlands are often degraded. USACE has inventoried upland lands and is currently working toward an inventory of those project lands in the lowland areas.

### 2.2.6 Interpretation and Visual Qualities

Sometimes called a sapphire on the plains, John Martin Reservoir is a peaceful paradise in which people play, birds flock, and wildlife roam. The area is unique in the sense that John Martin Reservoir, occupying land along both sides of the Arkansas River, offers the largest undeveloped expanse of public “natural areas” surrounding a regionally important reservoir in southeastern Colorado. The project therefore has preserved the visual qualities of an historic period and the associated open natural landscape of a bygone era.

The terrain in the area north of John Martin Reservoir is characterized by short grass prairie on gravel terraces – i.e., irrigated cropland that is now used as dry land pasture, and a few small remaining, irrigated cropland fields. The majority of land upstream of the John Martin dam has been licensed for wildlife conservation to the State of Colorado over the last 24 years. Livestock grazing on Project land has not occurred since the wildlife license was initiated.

The land south and near the reservoir is primarily rolling sand dunes covered with grasses and sagebrush accented with a few bluffs and rock outcroppings near the reservoir. The area is scenic and the natural shortgrass landscape north of the reservoir is reminiscent of the 1840's Santa Fe Trail. A portion of the Santa Fe National Historic Trail is located on Project land on the north side of the reservoir.

### 2.2.7 Mineral and Timber

Minerals found in Bent County include uranium, limestone, and copper. However, none of these are mined at John Martin Reservoir. Additionally, there are no timber resources found on USACE lands at John Martin Reservoir.

### 2.2.8 Water Quality

The water of the Arkansas River and its tributaries in the headwaters (above Canon City) are generally of excellent chemical quality. Some localized pollution from acid mine drainage occurs in the area of Leadville and is evident in California Gulch (tributary to the Arkansas River near Leadville), and in the Arkansas River for a few miles downstream. The mineral quality of the Arkansas River becomes progressively worse downstream to Canon City. This is attributed to accumulation of salts from return flows from irrigated lands and from solids picked up from the soluble rock strata along the tributary streams.

High mineral concentrations are found in the Arkansas River below Nepesta and in all the major tributaries. Locations on the Arkansas River's main stem at Pueblo and above and on the Purgatoire River at Trinidad contain dissolved minerals within the upper limits recommended by the Public Health Service Drinking Water Standards. See Section 6.4 for further information on water supply and irrigation at John Martin Reservoir.

### 2.2.9 Sedimentation

Most of the sediment transported by the Arkansas River is derived from the areas below Pueblo, Colorado. Sediment sampling records indicate that areas above Pueblo produce only about 500 ac-ft of sediment annually with less than 25 percent of that sediment reaching John Martin Reservoir. The principal tributaries to the north of the Arkansas River that produce sizeable quantities of sediment are Foundation and Chico Creeks, near Pueblo, Colorado, which contribute about 1,200 ac-ft annually to the Arkansas River. The watershed to the south of the Arkansas River between Pueblo and John Martin Reservoir yields about 6,000 ac-ft of sediment annually to the main stem. The principal sediment-producing streams from the south are the Huerfano Apishapa, and Purgatoire Rivers. The sediment load reaching John Martin Reservoir during the period of October 1942 through March 1972 was 81,756 ac-ft. Of this amount, about 58 percent was contributed by the Purgatoire River, which enters the main stem below Las Animas, Colorado.

Based on the information obtained from a January 2009 hydrographic and August 2009 aerial resurveys, 3,613 ac-ft of sediment has been deposited in John Martin Reservoir since May 1999. The total sediment deposition in the reservoir is 101,923 ac-ft as of August 2009. The average annual deposition rate for the 10.2 years of operation from May 1999 to August 2009 is 354 ac-ft per year. It should be noted that in determining the total capacity loss between surveys, no loss or gain was assumed between elevations 3,855 and 3,880 feet NGVD other than what was observed at elevation 3855 feet NGVD. Therefore, the incremental reservoir areas and the subsequent capacities above elevation 3,855 have been carried over from the 1999 analysis. A bathymetric survey for John Martin Reservoir was started on 28 November 2017. The data will be finalized and a new Area-Capacity curve will be developed in 2018. The purpose of the survey is to measure the accumulated sediment in the lake since the last survey completed in 2009, and to better calculate water storage accordingly.



### 2.2.10 Air Quality

The Southeastern Colorado and John Martin Reservoir are in Colorado's Eastern High Plains Region for air quality monitoring. Bent County is considered to be "in attainment" (i.e., it does not exceed State or Federal Environmental Protection Agency air quality standards) for all criteria pollutants (carbon monoxide, sulfur oxides, nitrogen dioxide, lead, ozone, and particulate matter). Ambient air quality in the Arkansas River Valley is generally good except during times of high wind. Moderate and periodic high concentrations of particulate matter, specifically fugitive dust, result from a combination of high winds, highly erodible soils, agricultural land use, and dry (drought) conditions. The Lamar air monitoring station, the closest station to John Martin Reservoir, has recorded three exceedances for fine particulate matter since 1992; however, these exceedances have all been associated with prolonged periods of drought and winds from the north and west with hourly wind averages greater than 30 miles per hour. Therefore, the exceedances have been treated as uncontrollable natural events.

## **2.3 CULTURAL RESOURCE AND ANALYSIS**

### 2.3.1 Prehistoric

The John Martin Reservoir area has a lengthy, varied, and colorful past dating from the earliest of Paleoindian prehistory to legendary days of characters such as Kit Carson, and the "Dustbowl" period which occurred just prior to construction of the dam. Prehistoric cultural history for the area and the plains in general is divided into time spans that generally reflect trends seen in the archaeological record. The Paleoindian Stage is defined as more than 11,500 years before the present (B.P.) to 7,000 years B.P.

While there are no reported Paleoindian sites in the immediate vicinity of John Martin Reservoir, there are known sites in the region. These include the famous Folsom Man type site (LA8121) in Northern New Mexico only 50 miles south of John Martin Reservoir Project, and the Olsen-Chubbuck Site (5 CH 1), a famous bison-kill site located about 25 miles north of the John Martin Reservoir Project.

These Paleoindian hunter-gatherer groups are thought to have subsisted primarily on megafauna and utilized seasonal vegetative resources. Drought, and possibly humans brought about the disappearance of megafauna at the end of the Pleistocene and sustenance then focused on smaller animal species and relied more heavily on plants. This change defined the beginning of the Archaic Stage, which lasted from about 7,000 years B.P. to about A.D. 200.

The Plains Woodland Period (A.D. 250 to A.D. 1000) began with the appearance of ceramics and architecture, which coincided with the introduction of maize horticulture and a shift in subsistence practices. The bow and arrow came into wider use near the end of this period.

Several changes occurred between A.D. 1000 and A.D. 1550 including the introduction of beans, new and productive varieties of maize, improved ceramics, and an increase of items being traded into the area. A drought near the end of the 13<sup>th</sup> Century caused at least partial abandonment of the area. Later sites were located close to water and in the canyon bottomlands, and a concern for defense seems apparent.

### 2.3.2 Hicklin Springs Petroglyphs Site

There are over an estimated 1,000 petroglyphs and several pictographs at the Hicklin Springs Petroglyph Site located at John Martin Reservoir. While some include historic Anglo and Hispanic names and dates from the late 1880's to primarily the 1920's and 1930's, many of these may date to the Archaic Period from approximately 5000 B.C. to about 200 A.D.

The majority of the petroglyphs at John Martin are abstract -- geometric, curvilinear, or linear lines and dots pecked or incised into the local outcrops of Dakota sandstone. Other glyphs are of the Plains Biographic style and include foot prints (several with six toes), turtles, buffalo, and lines that appear to represent the Rocky Mountains. Figures that apparently represent human forms are also carved into the stone. They include outlined, solidly pecked, and stick forms (Loendorf 2008).

The project also has a few of the incised linear glyphs that some researchers have proposed to be Ogam, a linear combination of lines and symbols representing an alphabetical system of Celtic origin (McGlone et al. 1994). This is, however, highly controversial due to the fact that there are no known Celtic artifacts in the American west to support the theory.



**Photo 2.4 Petroglyph at John Martin Reservoir** (USACE Photo)

USACE has a federally mandated cultural resources and land management responsibility under the National Historic Preservation Act of 1966 (NHPA) and the



Archeological Resource Protection Act (ARPA), as well as other federal laws that provide for the protection of natural and cultural resources. ARPA requires that the location of sites on federal lands not be disclosed unless they can adequately be protected.

The Hicklin Springs Petroglyph Site is patrolled by USACE and Colorado State Park Rangers; it is very important to reduce excessive and unsupervised visitation and vandalism. Site tours are offered for educational purposes and serve as one of the most important protection tools. Theft and vandalism are the biggest threats to rock art, which has withstood the elements for centuries. Everhart, who began photographing this site in 1979, said that an old-timer had told him that a vertical slab of rock with petroglyphs once stood like a gateway marker to the rock art site. That slab was taken years ago and unfortunately there are several examples of rifle and shotgun bullet holes at the site; e.g., vandalism to public resources. Use of the area should be restricted to appointment only. Allowing unrestricted public access will ultimately result in complete loss of these important historic resources. Simply touching the rock art results in deposition of body oils that cause defacement of the glyphs.

### 2.3.2 Historic

In 1540, Coronado was the first of the Spanish explorers to venture into the Great Plains. The Arkansas River valley has likely always been used as a primary route for prehistoric travelers and remained so for the Spanish, and later for Europeans, Mexicans, and Americans. Juan de Ulibarri is thought to have traveled through the John Martin Reservoir area in 1706. After the Louisiana Purchase in 1803, some of the earliest recorded American expeditions to the West, such as those of Zebulon Pike (1806-1807) and Jacob Fowler (1821-1822), are known to have traveled through the John Martin Reservoir area. These early expeditions and the new independence of Mexico led to the opening of trade along the famous Santa Fe Trail (1820-1880).

The Santa Fe Trail, a National Historic Trail, traverses the north side of the Arkansas River and John Martin Reservoir and leads to the famous adobe sentinel of the plains, Bent's Old Fort (1830's-1850's), now a National Historic Site. The Bent brothers with Ceran St. Vrain were the first established traders, trading beaver pelts and later buffalo hides with Mountain Men and Indians. Many historic Indian tribes are known to have wintered in the "Big Timbers," a densely treed area located immediately below John Martin Dam and extending downstream for about 30 miles. At least one Indian story is specific to the John Martin Reservoir Project area, the folklore story of "Red Shin's Standing-ground," which is further described in Section 5.3.3.

John W. Prowers, the area's first cattleman, established a large ranch and headquarters downstream from the current Reservoir Project. Many early residents of the area such as the Bent Brothers, Prowers, Kit Carson, and Thomas O. Boggs, had close family ties to Santa Fe and with the local Indian tribes.

The Santa Fe Trail was supplanted by the Santa Fe Railroad which reached eastern Colorado in 1872. Track was laid along the south side of the Arkansas River through the current John Martin Reservoir reaching La Junta in December 1875. The railroad also brought an end to the nomadic Plains Indian lifestyle and to the vast herds of buffalo upon which they depended. The site of the famous November 29, 1864 Sand Creek Massacre is only about 40

miles northeast of John Martin Dam. With the arrival of more settlers, the Plains tribes were removed to reservations.



**Photo 2.5 Santa Fe Trail** (USACE Photo)

The first major period of population growth in the area occurred in the early 1880's. Homesteaders were attracted by the railroad through the sale of its lands adjacent to the track right-of-way, and by other land speculators who saw opportunity in the area. The land was mostly dry, even in the floodplain of the Arkansas River, so farmers started building irrigation canals to utilize the rich valley soils. Many of the canals constructed in the early 1880's are still in existence today. Of these, the Fort Lyon Canal is the largest and irrigates land on the north side of the valley.

Construction of the Caddoa Dam Project began in 1939 with the relocation of the Atchison, Topeka and Santa Fe railroad from immediately adjacent to the Arkansas River to its current location farther south and uphill. Dam construction began in 1940, but work was halted in the Spring of 1943 as resources were needed for the war effort. Construction resumed in 1946, and the Project was completed in October of 1948 and dedicated in April of 1949. In June of 1949, Caddoa Dam was renamed John Martin Dam and Reservoir in honor of the late Colorado Congressman who was instrumental in promoting project authorization. Currently, the dam is eligible for the National Register of Historic Places but is not being considered for listing.



**Photo 2.6 Fort Lyon** (USACE Photo)

John Martin Project land upstream of the dam and above the elevation of 3,803 feet NGVD29 was surveyed for cultural resources in 1980, and a survey of the land below the dam was conducted in 1994. Prehistoric lithic scatters and historic-period farmsteads comprise the two major categories of archaeological sites found on project lands. Most of the prehistoric lithic scatters are characterized by low-density debris resulting from the manufacture and maintenance of stone tools used for hunting, cutting, and scraping, and occasional pieces of ground stone used to process vegetal material. The historic-period sites range from trash scatters of bottle and window glass, tin cans, and other pieces of metal to foundations and/or occasionally standing houses, barns, and other buildings.

An intensive pedestrian reconnaissance survey of John Martin Reservoir Project fee lands below the dam was conducted in July 1994. One historical site identified is the original Atchison, Topeka, and Santa Fe Railway track bed (Site 5BN431 in Brown 1994) dating from about 1872 to 1940. This site consists of the earthen railroad grade used prior to track relocation to accommodate the construction of John Martin Dam and Reservoir. Below the dam, the old railroad grade parallels the southern bank of the Arkansas River for approximately 0.5 miles and is currently used as an access road.



### 2.3.3 Long-term Cultural Resources Objectives

Cultural resources at John Martin Reservoir represent an important asset that connects past, present and future generations of visitors and residents. Therefore, as funding allows, a Cultural Resources Management Plan (CRMP) shall be developed and incorporated into the OMP in accordance with EP 1130-2-540. The purpose of the CRMP is to provide a comprehensive program to direct the historic preservation activities and objectives at John Martin Reservoir. Cultural resource's surveys have been done on some of the locations on project lands. Completion of a full inventory of cultural resources at John Martin Reservoir is a long-term objective that is needed for compliance with Section 110 of the National Historic Preservation Act (NHPA). All currently known and newly recorded sites must be evaluated to determine their eligibility for the National Register of Historic Places (NRHP). In accordance with Section 106 of the NHPA, any proposed ground-disturbing activities or projects, such as those described in this master plan or as may be proposed in the future by others for right-of-way easements, may require coordination with the State Historic Preservation Office (SHPO) and possibly cultural resource surveys to locate and evaluate historic and prehistoric resources. Resources determined eligible for the NRHP must be protected from proposed project impacts, or the impacts must be mitigated. All future cultural resource investigations at John Martin Reservoir must be coordinated with the State Historic Preservation Officer and federally-recognized Tribes to insure compliance with the NHPA, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act.

## **2.4 DEMOGRAPHIC AND ECONOMIC ANALYSIS**

### 2.4.1 Zone of Interest

The zone of interest for the socio-economic analysis of John Martin Reservoir includes the county in which the lake lies, Bent County, Colorado as well as two cities in neighboring counties, La Junta (Otero County) and Lamar (Prowers County). The population of this one county and two cities in Colorado are referred to as the zone of interest for purposes of this Master Plan.

### 2.4.2 Population

The total population for the zone of interest in 2015 was 20,657, as shown in Table 2.7. The majority of the zone of interest population (approximately 37 percent) resides in Lamar; 34 percent resides in La Junta, and 29 percent resides in Bent County. The population in the zone of interest makes up less than 1 percent of the total population of Colorado. The Colorado Department of Local Affairs' population forecast for 2045 shows growth of 0.4 percent annually in Bent County (as compared with the 2015 U.S. Census Bureau American Community Survey), while Otero County, in which La Junta city is located, and Prowers County, in which Lamar is located, are expected to have annual negative growth at a rates of 0.3 percent and 0.2 percent, respectively. During the same period, the population of Colorado is projected to increase at an annual rate of 1.5 percent, and the national growth rate is expected to be 0.4 percent per year based on the U.S. Census Bureau's population estimates and projections.

**Table 2.7 2000 and 2015 Population Estimates and 2045 Projections**

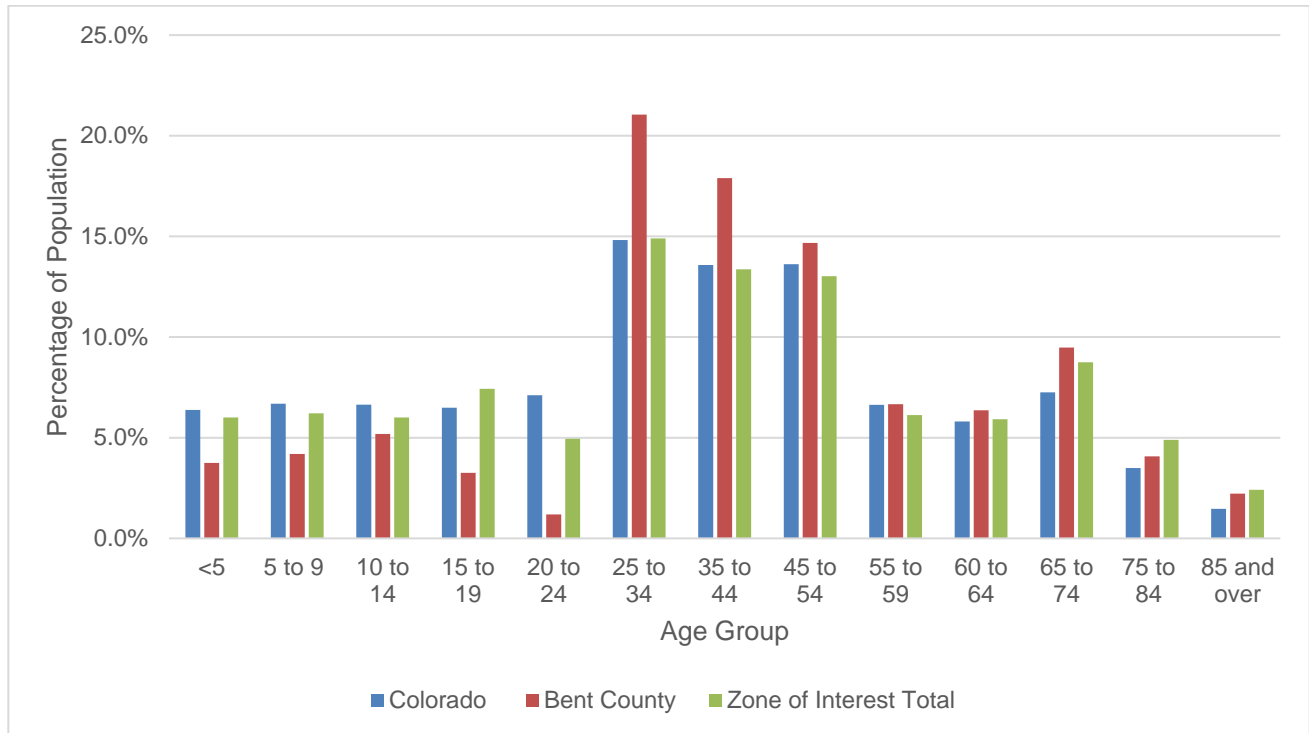
Geographical Area	2000 Population Estimate	2015 Population Estimate	2045 Population Projection
Colorado	4,301,261	5,278,906	8,181,112
Bent County	5,998	5,895	6,565
La Junta city	7,568	7,018	NA
<i>Otero County</i>	20,311	18,572	17,160
Lamar city	8,869	7,744	NA
<i>Prowers County</i>	14,483	12,235	11,655
Zone of Interest Total	22,435	20,657	NA
Source: U.S. Census Bureau, Population Division (2000 Estimate); U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate) Colorado Department of Local Affairs (2045 Projections)			

The distribution of the population among gender is displayed in **Error! Reference source not found.8**. The zone of interest, with a 54 percent male and 46 percent female population has a higher concentration of males when compared to the state of Colorado, which is approximately 50 percent male and 50 percent female. In Bent County where the lake is located, the distribution is 69 percent male and 31 percent female.

**Table 2.8 2015 Population Estimate by Gender**

Geographical Area	Male	Female
Colorado	2,648,667	2,630,239
Bent County	4,046	1,849
La Junta city	3,373	3,645
Lamar city	3,811	3,933
Zone of Interest Total	11,230	9,427
Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate)		

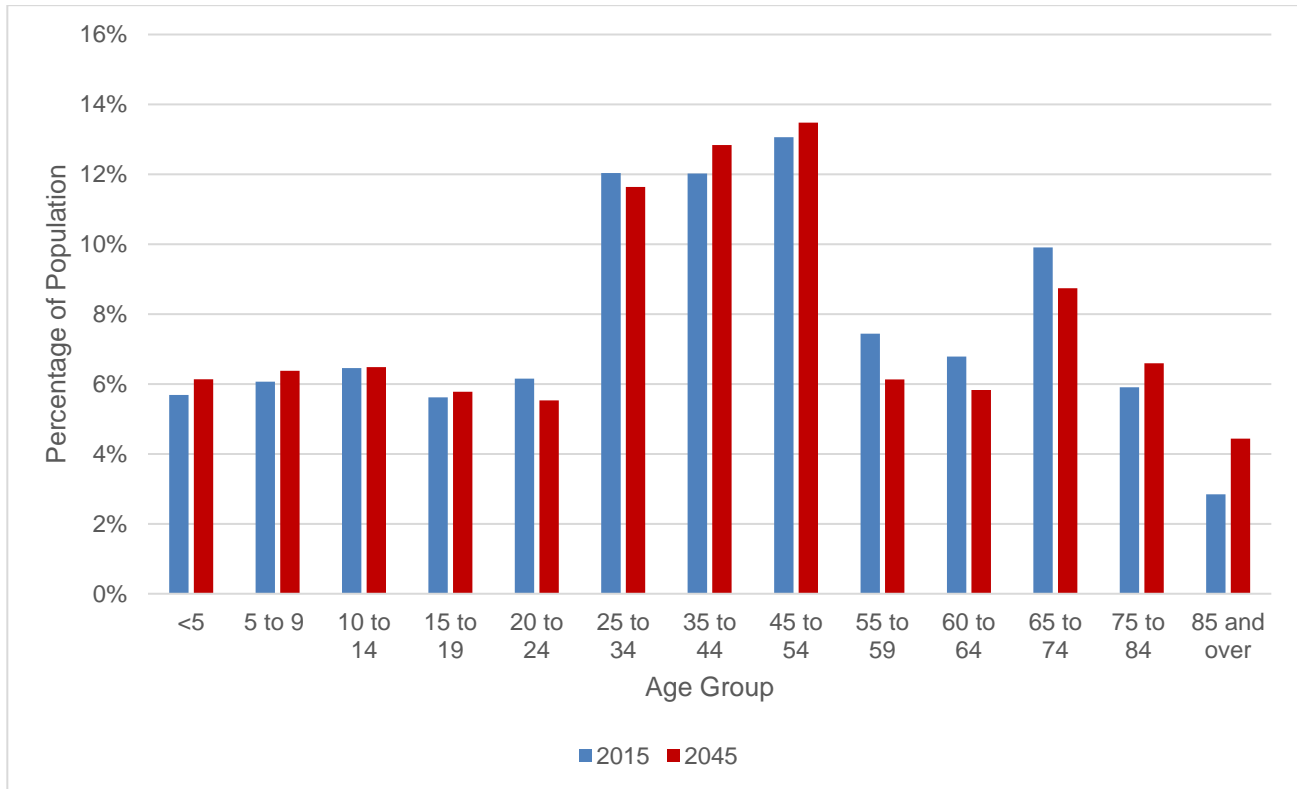
As displayed in Figure 2.3, the distribution of age groups is similar between the zone of interest and the state of Colorado. As illustrated, Bent County has more residents between the ages of 25 and 44 and less under the age of 25 relative to both the zone of interest average and the state.



**Figure 2.3 2015 Percent of Population by Age Group**

(Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 estimate))

Figure 2.4 displays the Colorado Department of Local Affairs' population estimate by age group for Planning Region 6 in 2015 compared to their 2045 projections. Planning Region 6 includes the counties of Bent, Prowers, and Otero, which encompass the zone of interest, as well as Crowley, Kiowa, and Baca Counties. The forecast shows very little change in the population distribution by age group. When comparing the two years, there is a one percent or less change in distribution within each age group.



**Figure 2.4 Colorado Planning Region 6 Population Estimate and Projection by Age Group**

(Source: Colorado Department of Local Affairs (2015 Estimates and 2045 Projections for Planning Region 6: Baca, Bent, Crowley, Kiowa, and Prowers Counties))



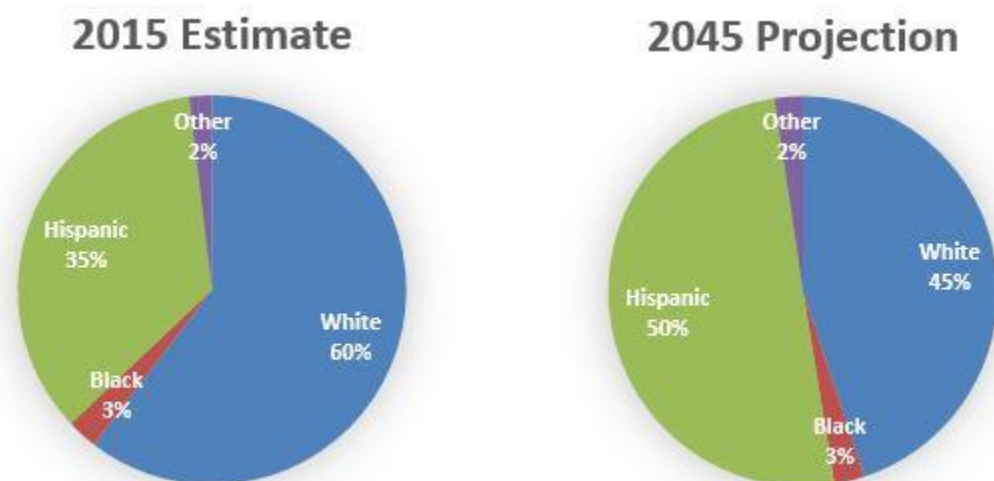
Population by race and Hispanic Origin is displayed in Table 2.9. The zone of interest population is approximately 53 percent White, 40 percent Hispanic or Latino, and 3 percent Black. The other race categories account for less than 2 percent each of the population. By comparison, the state's population is approximately 69 percent White, 21 percent Hispanic or Latino, 4 percent Black, and 3 percent Asian.

**Table 2.9 2015 Population Estimate by Race/Hispanic Origin**

Area	White	Black	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some Other race alone	Two or more races	Hispanic or Latino
Colorado	3,646,224	203,276	28,448	150,165	6,886	9,354	121,967	1,112,586
Bent County	3,292	545	144	44	0	13	13	1,844
La Junta city	3,142	9	68	86	187	49	73	3,404
Lamar city	4,595	52	0	0	0	0	70	3,027
Zone of Interest Total	11,029	606	212	130	187	62	156	8,275

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 estimate)

Figure 2.5 from the Colorado Department of Local Affairs' illustrates the population estimate by race/Hispanic origin in 2015 distributed between four categories, White, Black, Hispanic and Other, as well as the projected distribution in 2045 for Colorado's Planning Region 6. As stated previously, Planning Region 6 includes Baca, Bent, Crowley, Kiowa, and Prowers Counties. It can be seen from the two graphs in the figure that the percentage of the Hispanic population is expected to increase by 15 percent while the White population decreases by 15 percent. The Black and Other categories as a percentage of the overall population in the Planning Region is expected to remain constant.



**Figure 2.5 Colorado Planning Region 6 Population Estimate and Projection by Race/Ethnicity** (Source: Colorado Department of Local Affairs (2015 Estimates and 2045 Projections for Planning Region 6: Baca, Bent, Crowley, Kiowa, and Prowers Counties))

### 2.4.3 Education and Employment

Table 2.10 displays the highest level of education attained by the population ages 25 and over. In the zone of interest, 8 percent of the population has less than a 9<sup>th</sup> grade education, and another 11 percent has between a 9<sup>th</sup> and 12<sup>th</sup> grade education. Thirty four percent has a high school diploma or equivalent and another 24 percent has some college and no degree. 11 percent has an Associate's degree; 7 percent has a Bachelor's degree; and 4% has a graduate or professional degree. In Colorado, 4 percent of the population has less than a 9<sup>th</sup> grade education; another 5 percent has between a 9<sup>th</sup> and 12<sup>th</sup> grade education; 22 percent has at least a high school diploma or equivalent. 22 percent has some college; 8 percent has an Associate's degree; 24 percent has a Bachelor's degree; and 14 percent has a graduate or professional degree.

**Table 2.10 2015 Population Estimate by Highest Level of Educational Attainment, Population 25 Years of Age and Older**

Area	Highest Level of Educational Attainment							
	Population 25 years and over	Less than 9th grade	9th to 12th grade, no diploma	High school graduate (includes equivalency)	Some college, no degree	Associate degree	Bachelor degree	Graduate or professional degree
Colorado	3,520,177	135,881	191,341	767,325	790,822	292,801	847,977	494,030
Bent County	4,859	506	652	2,164	760	439	235	103
La Junta city	4,614	254	439	1,296	1,376	569	402	278
Lamar city	4,863	387	481	1,474	1,347	597	404	173
Zone of Interest Total	14,336	1,147	1,572	4,934	3,483	1,605	1,041	554

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 estimate)

Employment by sector is presented in Table 2.11 and Figure 2.6. The largest percentage of the population in the zone of interest is employed in the educational services, and health care and social assistance sector at 24 percent. This is followed by 15 percent in retail trade, 12 percent in public administration, 10 percent in the arts, entertainment, and recreation, and accommodation and food services sector. Eight percent of employment is in transportation and warehousing, and utilities, 6 percent in the professional, scientific, and management, and administrative and waste management services sector, another 6 percent in other services, except public administration. Finally, there are 5 percent each in the construction sector and the agriculture, forestry, fishing and hunting, and mining sector. The remainder of the employment sectors each comprise 5% or less of the zone of interest's labor force.

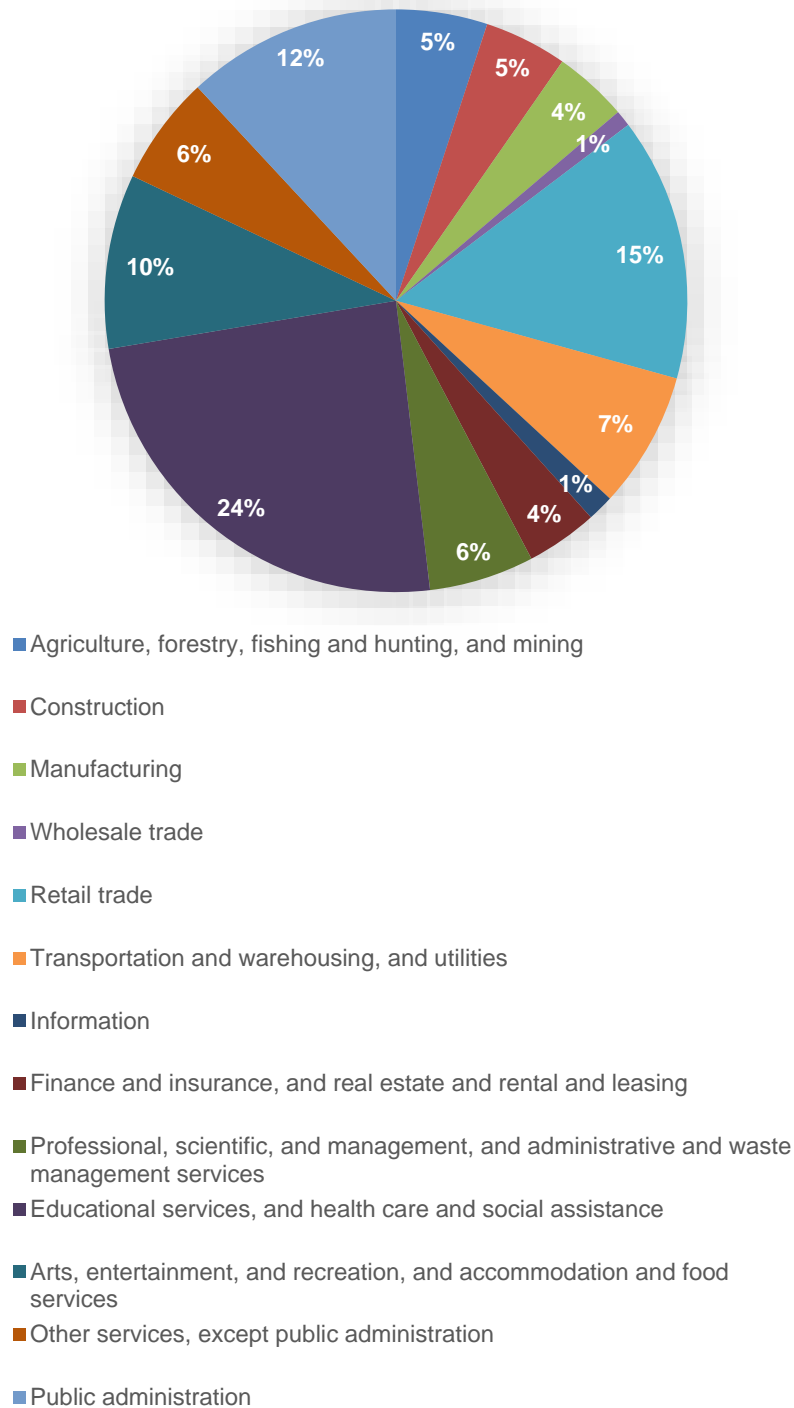
Table 2.11 also includes a column displaying the forecasted growth rate of each industry, if available, for Eastern and Southern Colorado between 2015 and 2025. The Department projects the greatest amount of growth (20 percent) in the educational services, and health care and social assistance sector, followed by 13 percent growth in retail trade, and 12 percent in the agriculture, forestry, fishing and hunting, and mining sector. Negative growth is projected in the finance and insurance, and real estate and rental and leasing industry as well as the manufacturing and the wholesale trade industries.

**Table 2.11 Annual Average Employment by Sector**

Employment Sector	Geographic Area					
	Colorado	Bent County	La Junta city	Lamar city	Zone of Interest Total	Eastern/Southern Colorado Growth Rate 2015 - 2025
Civilian employed population 16 years and over	2,624,436	1,212	2,632	3,415	7,259	NA
Agriculture, forestry, fishing and hunting, and mining	67,330	256	49	63	368	12.0%
Construction	195,258	78	135	121	334	1.7%
Manufacturing	182,453	13	67	219	299	-0.8%
Wholesale trade	68,120	5	44	16	65	-1.8%
Retail trade	291,389	45	497	519	1,061	12.6%
Transportation and warehousing, and utilities	118,979	48	339	163	550	NA
Information	79,280	23	43	40	106	3.5%
Finance and insurance, and real estate and rental and leasing	182,238	38	89	161	288	-3.7%
Professional, scientific, and management, and administrative and waste management services	355,082	84	107	232	423	NA
Educational services, and health care and social assistance	537,357	264	605	889	1,758	20.1%
Arts, entertainment, and recreation, and accommodation and food services	284,027	30	272	401	703	4.8%
Other services, except public administration	133,588	65	115	259	439	9.6%
Public administration	129,335	263	270	332	865	7.6%

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate), Colorado Dept. of Labor, Labor Market Information (Eastern and Southern Colorado Growth Rates)

## Percentage of Zone of Interest



**Figure 2.6 Zone of Interest Employment by Sector**

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate)

The unemployment rate for the zone of interest is displayed at the county level in Table 2.12. Otero County, where La Junta city is located, has the highest unemployment rate of the three counties at 5.8 percent, followed by Prowers County where Lamar is located with an unemployment rate of 4.1 percent. Bent County had the lowest unemployment rate of the three counties in 2015 at 3.9 percent, which was the same rate as the state of Colorado.

**Table 2.12 Labor Force, Employment and Unemployment, 2015 Averages**

Geographic Area	Civilian Labor Force	Number Employed	Number Unemployed	Unemployment Rate
Colorado	2,833,509	2,722,985	110,524	3.9%
Bent County	1,720	1,653	67	3.9%
Otero County	7,988	7,526	462	5.8%
Prowers County	5,854	5,615	239	4.1%
Source: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics (2015 Annual Averages)				

#### 2.4.4 Households, Income, and Poverty

Table 2.13 displays the number of households and average household sizes in the zone of interest as of the 2010 census. There were approximately 1.97 million households in the state of Colorado with an average household size of 2.49. The zone of interest contained approximately 7,900 of those homes with a smaller average household size.

**Table 2.13 2010 Households and Household Size**

Area	Total Households	Average Household Size
Colorado	1,972,868	2.49
Bent County	1,832	2.34
La Junta city	2,919	2.33
Lamar city	3,102	2.43
Zone of Interest Total	7,853	2.37
Source: U.S. Census Bureau, 2010 Census		

As shown in Table 2.14, median household income in the zone of interest ranged from \$31,113 in La Junta to \$36,791 in Bent County in 2015. Per capita income in the zone of interest is \$17,394, which is lower than the state of Colorado by approximately \$15,000.

**Table 2.14 2015 Median and Per Capita Income**

Geographic Area	Median Household Income	Per Capita Income
Colorado	\$60,629	\$32,217
Bent County	\$36,791	\$13,544
La Junta city	\$31,113	\$18,132
Lamar city	\$35,487	\$19,657
Zone of Interest Total	N/A	\$17,394
Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate)		

As shown in Table 2.15, 25.5 percent of people in the zone of interest had incomes that fell below the poverty level within the last twelve months as of 2015, which was more than double the percentage of people in the state whose incomes fell below the poverty level. In terms of families below the poverty level, all of the areas within the zone of interest had a greater percentage of families below the poverty level than the state of Colorado (8.5 percent).

**Table 2.15 Percent of Families and People Whose Income in the Past 12 Months is Below the Poverty Level (2015)**

Geographic Area	All Persons	All Families
Colorado	12.7%	8.5%
Bent County	25.6%	20.7%
La Junta city	31.3%	21.1%
Lamar city	20.3%	14.9%
Zone of Interest Total	25.5%	N/A

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate)

#### 2.4.5 Social, Environmental and Environmental Benefits

USACE recognized the importance of John Martin Reservoir and the activities on USACE lands and waters as being an important part of the local economy. Besides the obvious economic savings through flood risk management and development advantages through water supply, businesses can see investment opportunities, and people are drawn to the natural areas surrounding USACE lakes, as is evidenced by the growing number of residents adjacent to USACE properties. Nationally, USACE lakes attract about 335 million recreation visits every year, with direct economic benefits on local economies within a 30 mile radius.

There are many extended social, environmental, and economic benefits of John Martin Reservoir for surrounding communities for 2016. The social benefits from John

Martin Reservoir come by providing opportunities for active recreation, which help combat one of the nation's most significant health problems: lack of physical activity. There is also a large body of research that supports the positive physical and mental health benefits of being outdoors in nature. Recreational programs and activities at USACE lakes also help strengthen family ties and friendships; provide opportunities for children to develop personal skills, social values, and self-esteem; and increase water safety.

Extended economic benefit comes from the money spent by visitors to USACE lakes on trip expenses. This spending adds to the local and national economies by supporting jobs and generating income. Visitor spending represents a sizable component of the economy in many communities around USACE lakes.

The extended environmental benefits are numerous. Recreation experiences increase motivation to learn more about the environment; understanding and awareness of environmental issues; and sensitivity to the environment. The natural areas around John Martin Reservoir are a living classroom open to the public for the benefit of current and future generations.



## 2.5 RECREATION FACILITIES, ACTIVITIES, AND NEEDS

Recreational resources at John Martin Reservoir serves a diverse population of visitors locally and from the Denver, Colorado Springs, and Pueblo metropolitan areas. The Reservoir's rural location, developed park, and extensive wildlife management areas offer visitors a unique wilderness experience on the prairie of eastern Colorado.

As shown in Table 2.16, the CPW leases or holds license to roughly 20,000 acres at John Martin Reservoir, which includes two developed areas in John Martin Reservoir State Park; Lake Hasty Campground and Point Campground. Lake Hasty is a 73-acre former borrow area on the east side of the dam that was excavated during dam construction and includes a swimming beach. It is approximately 2,000 feet long by 1,500 feet wide. The CPW manages Lake Hasty campground, which provides highly developed campsites that are open year-round, with plentiful shade, electric hookups, water, and comfort stations. Point Campground is less developed and provides basic facilities.

The following factors contribute to the importance of John Martin Reservoir as a recreational area:

- Located 3.5 hours from Denver, and two hours from Colorado Springs and Pueblo
- Established campground and day-use areas
- Easily accessible boat ramps and uncrowded waters at both Lake Hasty and the Reservoir
- Plentiful fish and game for outdoor sportsman
- Large areas for wildlife observation, including Bald Eagles and the threatened Piping Plover and endangered Interior Least Tern



**Photo 2.7 Piping Plover and Interior Least Tern** (USACE Photo)

### 2.5.1 Zone of Influence and Visitation Statistics

Bent County, where the reservoir is located and in which the predominance of visitors come, is the primary area of influence for public use and management of John

Martin Reservoir. Other areas of influence are the towns of Lamar and La Junta, both located near the Reservoir.

### 2.5.2 Visitation Profile

The majority of visitors to John Martin Reservoir come from within a 100-mile radius of the reservoir, with the most frequent users coming from within a 50-mile radius. Lake Hasty visitation captures a variety of campers, including stop-over campers who utilize the area as an overnight stop.



**Photo 2.8 Bicyclist at John Martin Reservoir** (CPW Photo)

### 2.5.3 Recreation Areas and Facilities

All recreational areas and facilities on John Martin Reservoir lands are leased and operated by the CPW. Recreational opportunities include but are not limited to the following:

- Fishing - Fishing in John Martin Reservoir and Lake Hasty can be excellent for walleye, saugeye, wiper, large and small mouth bass, crappie, channel catfish and bream. Lake Hasty is also stocked with rainbow and cutthroat trout each spring and fall.
- Water Sports - The reservoir is open to all types of water sports, including windsurfing, waterskiing and PWCs (personal watercraft). Lake Hasty is only open to small watercraft that do not use gas motors – electric motors are permitted.

- Picnicking - Picnic facilities are available at the Overlook and Lake Hasty Recreation Area.
- Camping – All sites at Lake Hasty Recreation Area have electricity.
- Hiking - The Red Shin Hiking Trail is a 4.5-mile trail that starts near the stilling basin and offers many nature-viewing opportunities in a variety of habitats.
- Wildlife Viewing - The Santa Fe Slough on the east and west sides of the dam road provides excellent opportunities to view waterfowl in their natural habitat. The west side of the dam road also features a viewing blind.
- Essential Natural Habitat - The sand and gravel shores of John Martin Reservoir are among the few remaining nesting areas in the state of Colorado for the threatened Piping Plover and the endangered Interior Least Tern.
- Boat Ramps – There are three boat ramps, two in Point Campground and a third in the wildlife area off of JJ and 19 roads, west of Point Campground.



**Photo 2.9 Lake Hasty Campground (USACE Photo)**



**Table 2.16 Outgrants**

Leases	Acres
<b>Colorado Division of Wildlife (now CPW)</b>	19,611
<b>Colorado Division of Parks and Outdoor Recreation (now CPW)</b>	1,728

The Point Campground is located on the north shore and offers basic camping, and two boat docks. Sitting on the ridge next to the reservoir, it offers exceptional views of the reservoir and surrounding landscape. The campground is open year-round.

#### 2.5.4 Recreational Analysis - Trends

The CPW examines outdoor recreation trends and creates the Statewide Comprehensive Outdoor Recreation Plan (SCORP). Colorado comprises nearly 66 million acres of public lands. Of this land, 37 percent (24,886,303 acres) is owned by Federal agencies, including John Martin Reservoir. These public areas are an important part of the recreational opportunities in Colorado, and USACE works closely with its state partners to ensure adequate space and facilities. The SCORP is one of the tools used to inform planning decisions at John Martin Reservoir. Table 2.17 lists the SCORPS top ten outdoor recreation activities for the state of Colorado.

**Table 2.17 Top Ten Recreation Activities**

Activity	
Running/Jogging	16.6%
Bicycling (road/paved surface)	12.5%
Fishing (freshwater)	12.5%
Hiking (day)	11.0%
Camping (within ¼ mile of home/vehicle)	9.6%
Wildlife viewing (more than ¼ mile from home/vehicle)	7.3%
Camping (RV)	4.8%
Birdwatching (more than ¼ mile from home/vehicle)	4.5%
Hunting (rifle)	3.8%

Source: 2013 Colorado SCORP

Recreational trends for non-motorized activities indicate that there is increasing demand for multi-sport and adventure racing, while activities such as rifle hunting and camping have seen a decrease in demand from 2009-2012. However, these activities still represent a large per-capita demand. Additionally, 90 percent of those surveyed participated in some form of outdoor recreation over the past year, and 60 percent of those surveyed stated they plan to increase their participation in outdoor recreation over the next five years.

Similar to national trends, hiking, jogging, camping and wildlife viewing are popular activities. Walking, hiking/backpacking, picnicking, and fishing make up the four most popular outdoor recreation activities. While 36 percent of those surveyed participate in

fishing annually, almost 16 percent participate in hunting. Many of the outdoor activities that ranked in the top activities by participation rates occur at John Martin Reservoir. Among these are picnicking (third), fishing (fourth), tent camping (fifth), wildlife viewing (12<sup>th</sup>), tent and recreational vehicle camping (5<sup>th</sup> and 18<sup>th</sup>), hunting of all types (22<sup>nd</sup>, 24<sup>th</sup>, and 35<sup>th</sup>), and geocaching (36<sup>th</sup>).



**Photo 2.10 Birds Flying Over Lake Hasty** (USACE Photo)

#### 2.5.5 Recreation Analysis – Needs

Visitation at John Martin Reservoir varies considerably from year-to-year. Table 2.18 gives a summary of the CPW visitation record along with the various activities that visitors were engaged in from 2013 through September 2016. Average visitation over these four years is 185,000 per year, with the heaviest visitation between the months of June, July, and August. The most common activities that visitors engaged in were trail use and wildlife viewing, fishing, and non-primitive camping. There were no records kept for the number of visitors engaged in hunting activities. However, the majority of the area is managed for wildlife, so hunting is understood to be a major activity at John Martin Reservoir.

**Table 2.18 John Martin Reservoir State Park Visitation by Number of User 2013-September 2016**

		Jan - Sep 2016	2015	2014	2013
<b>Activity:</b>					
Camping:					
	<i>Group Camping</i>	432	420	365	693
	<i>Electrical Camping</i>	23,420	25,054	12,092	14,010
	<i>Basic Camping</i>	4,489	3,943	721	516
Trail Use					
	<i>Walking</i>	118,451	94,543	33,704	797
	<i>Hiking</i>	98,709	90,865	42,790	11,673
	<i>Biking</i>	46,269	120,860	2,983	371
Picnic					
	<i>Picnic</i>	107,962	124,432	57,811	9,583
	<i>Group Picnic</i>	145	229	210	431
Interpretation					
	<i>Personal Interpretation</i>	423	814	378	311
	<i>Non-Personal Interp</i>	20,800	46,088	13,082	13,579
	<i>Environmental Ed</i>	120	35	150	170
Water Activities					
	<i>Water Skiing</i>	18,563	18,554	3,457	6,532
	<i>PWC Use</i>	3,437	4,554	1,467	3,725
	<i>Swimming</i>	61,888	150,993	18,831	12,832
	<i>Fishing</i>	125,855	158,697	64,808	34,426
	<i>Pleasure Boating</i>	805	24,631	7,778	12,683
General Activities					
	<i>Sight Seeing</i>	292,628	341,047	51,571	17,507
	<i>Special Events</i>	20	124	115	310
	<i>Wildlife Viewing</i>	49,354	154,478	52,343	24,716

Source: Colorado Department of Parks and Wildlife

### 2.5.6 Recreational Carrying Capacity

The recreation carrying capacity of a lake is the amount of development, use, and activity any lake and associated recreational lands can sustain without being permanently adversely impacted. No recreational carrying capacity studies have been completed for John Martin Reservoir to the date of this master plan revision.

### 2.5.7 Recreational Fee Analysis

USACE does not manage any of the recreational facilities at John Martin Reservoir, therefore no fees are collected. The CPW, who manages the recreational facilities, collects fees and is responsible for the operations and maintenance of all recreational areas at the project.

## CHAPTER 3 - RESOURCE GOALS AND OBJECTIVES

### 3.1 INTRODUCTION

This chapter sets forth goals and objectives necessary to achieve the USACE vision for the future of John Martin Reservoir. The terms “goal” and “objective” are often defined as synonymous, but in the context of this Master Plan goals express the overall desired end state of the Master Plan whereas resource objectives are specific task-oriented actions necessary to achieve the overall Master Plan goals.

### 3.2 RESOURCE GOALS

The following statements paraphrased from *EP1130-2-550*, Chapter 3, expresses the goals for the John Martin Reservoir Master Plan:

- GOAL A.** Provide the best management practices to respond to regional needs, resource capabilities and capacities, and expressed public interests consistent with authorized project purposes.
- GOAL B.** Protect and manage project natural and cultural resources through sustainable environmental stewardship programs.
- GOAL C.** Provide public outdoor recreation opportunities that support project purposes and public interests while sustaining project natural resources.
- GOAL D.** Recognize the unique qualities, characteristics, and potentials of the project.
- GOAL E.** Provide consistency and compatibility with national objectives and other State and regional goals and programs.

In addition to the above goals, USACE management activities are guided by USACE-wide Environmental Operating Principles as follows:

- Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse, and sustainable condition is necessary to support life.
- Recognize the interdependence of life and the physical environment. Proactively consider environmental consequences of USACE programs and act accordingly in all appropriate circumstances.
- Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.



- Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.
- Seek ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full life cycle of our processes and work.
- Build and share an integrated scientific, economic and social knowledge base that supports a greater understanding of the environment and impacts of our work.
- Respect the views of individuals and groups interested in USACE activities; listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

### 3.3 RESOURCE OBJECTIVES

Resource objectives are defined as clearly written statements that respond to identified issues and that specify measurable and attainable activities for resource development and/or management of the lands and waters under the jurisdiction of the Albuquerque District, John Martin Reservoir Project Office. The objectives stated in this Master Plan support the goals of the Master Plan, USACE Environmental Operating Principles (EOPs), and applicable national performance measures. They are consistent with authorized project purposes, Federal laws and directives, regional needs, and resource capabilities, and they take public input into consideration. Recreational and natural resources carrying capacities are also accounted for during development of the objectives found in this Master Plan.

The objectives in this master plan are intended to provide project benefits, meet public needs, and foster environmental sustainability for John Martin Reservoir to the greatest extent possible. They include recreational objectives, natural resource management objectives, visitor information, education, and outreach objectives, general management objectives, and cultural objectives.

**Table 3.1 Recreational Objectives**

Recreational Objectives	Goals				
	A	B	C	D	E
Evaluate the demand for improved recreation facilities and increased public access on USACE-managed public lands and water for recreational activities (i.e. camping, walking, hiking, biking, boating, fishing, wildlife viewing, etc.) and facilities (i.e. campsites, picnic facilities, overlooks, all types of trails, boat ramps, courtesy docks, interpretive signs/exhibits, and parking lots).	*		*		

Recreational Objectives	Goals				
	A	B	C	D	E
Cooperate, where possible, with CPW to improve and modernize day use and campground facilities through addition and repair of amenities, including, but not limited to: road improvements, sewer hook ups, increased electrical service, concrete or asphalt recreational vehicle pads, restrooms, trails, pavilions, and improved park entrances.	*		*		
Monitor public use and evaluate potential impacts from overuse and crowding. Take action to prevent/remediate overuse, conflict, and public safety concerns.	*		*		
Evaluate recreational use zoning and regulations for designated quiet water or no-wake areas with emphasis on natural resource protection, quality recreational opportunities, and public safety concerns.	*				
Follow the Environmental Operating Principles associated with recreational use of waterways for all water-based management activities and plans.		*	*		*
Increase universally accessible facilities on John Martin Reservoir.	*		*		*
Consider flood/conservation pool levels to address potential impact to recreational facilities (i.e. campsites, boat ramps, courtesy docks, zebra mussels, etc.).	*	*	*	*	
Consider long-term sustainable operational and maintenance costs when planning future new recreational facilities or upgrading and expanding existing facilities.					
Ensure consistency with USACE Recreation Strategic Plan.					*
Monitor the SCORP and adjacent municipality plans to insure that USACE is responsive to outdoor recreation trends, public needs and resource protection within a regional framework. All plans by others will be evaluated in light of USACE policy and operational aspects of John Martin Reservoir.					*

\*Denotes that the objective helps to meet the specified goal.

**Table 3.2 Natural Resource Management Objectives**

Natural Resource Management Objectives	GOALS:				
	A	B	C	D	E
Consider flood/conservation pool levels to ensure that natural resources are managed in ways that are compatible with primary project purposes of flood risk management, water supply and irrigation.	*	*		*	
Ensure project lands are managed with preservation and conservation of natural habitat as a primary objective in order to maintain the public open space.	*			*	

Natural Resource Management Objectives	GOALS:				
	A	B	C	D	E
Work with partners to actively manage and conserve fish and wildlife resources, especially special status species, by implementing ecosystem management principles, including the use of native species adapted to the ecological region in restoration and mitigation plans.	*	*		*	*
Consider watershed approach during decision-making process.					*
Optimize resources, labor, funds, and partnerships for protection and restoration of fish and wildlife habitats.		*			*
Minimize activities that detract from the scenic beauty and aesthetics of the lake.	*	*	*	*	
Continually evaluate erosion control and sedimentation issues at John Martin Reservoir and develop alternatives to resolve the issues.	*	*			*
Address unauthorized uses of public lands such as off-road vehicle use, trash dumping, unauthorized fires, fireworks, poaching, clearing of vegetation, unauthorized trails and paths, and placement of advertising signs that create negative environmental impacts.	*	*	*	*	*
Monitor lands and waters for invasive, non-native and aggressively spreading native species and work with partners to take action to prevent and/or reduce the spread of these species. Invasive species of great concern are tamarix, smallflower tamarix, Russian thistle, and kochia.	*	*		*	*
Protect and/or restore important native habitats such as prairie, riparian zones, and wetlands, where they occur, or historically occurred on project lands. Special emphasis should be given to protect and/or restore special or rare plant communities, to include actions that promote butterfly and/or pollinator habitat, migratory bird habitat, and habitat for birds listed by USFWS as Birds of Conservation Concerns. Some of these habitats may be designated as Environmentally Sensitive Areas.	*	*	*	*	*

\*Denotes that the objective helps to meet the specified goal.

**Table 3.3 Visitor Information, Education, and Outreach Objectives**

Visitor Information, Education and Outreach Objectives	Goal				
	A	B	C	D	E
Provide more opportunities for communication with agencies, special interest groups, and the general public (i.e. comment cards, updates to City Managers, web page).	*			*	*
Implement more educational, interpretive, and outreach programs at the lake office and around the lake. Topics to include: history, lake operations (flood risk management and water supply), water safety, recreation, nature, cultural resources, ecology, and USACE missions.	*	*	*	*	*
Enhance network among local, state, and federal agencies in order to exchange lake-related information for public education and management purposes.	*			*	*
Increase public awareness of special use permits or other authorizations required for special activities, organized special events, and commercial activities on public lands and waters of the lake.	*	*	*		
Capture trends concerning boating accidents and other incidents on public lands and waters and coordinate data collection with other public safety officials.	*		*	*	*
Promote USACE Water Safety message.	*		*	*	*

\*Denotes that the objective helps to meet the specified goal.

**Table 3.4 General Management Objectives**

General Management Objectives	Goal				
	A	B	C	D	E
Resurvey and maintain the public lands boundary line to ensure it is clearly marked and recognizable in all areas to reduce habitat degradation and encroachment actions.	*	*		*	
Ensure consistency with USACE Campaign Plan (national level), IPlan (regional level), OPlan (District level).					*
Ensure green design, construction, and operation practices, such as the Leadership in Energy and Environmental Design (LEED) criteria for government facilities, are considered as well as applicable Executive Orders.					*

General Management Objectives	Goal				
	A	B	C	D	E
Carefully manage non-recreation outgrants such as utility and road easements in accordance with national guidance set forth in <i>ER-1130-2-550</i> and applicable chapters in <i>ER 405-1-12</i> . Designate and manage utility corridors as a management tool to reduce habitat fragmentation.	*	*			*
Manage project lands and recreational programs to advance broad national climate resiliency goals as set forth in <i>Executive Order 13693</i> and related USACE policy.					*

\*Denotes that the objective helps to meet the specified goal.

**Table 3.5 Cultural Resources Management Objectives**

Cultural Resources Management Objectives	Goal				
	A	B	C	D	E
Monitor and coordinate lake development and the protection of cultural resources with appropriate entities.	*	*		*	*
Complete an inventory of cultural resources as funds are available.	*	*		*	*
Increase public awareness and education of regional history.		*		*	*
Currently, no sites are listed on the National Register of Historic Places at John Martin Reservoir. However, the USACE will ensure any future historical preservation requirements are fully integrated into the John Martin Reservoir Master Plan and planning decision making process (Section 106 and 110 of the National Historic Preservation Act; the Archeological Resources Protection Act; and the Native American Graves Protection and Repatriation Act on public lands surrounding the lake).		*		*	*
Develop partnerships that promote and protect cultural resources at John Martin Reservoir.		*	*	*	*
Stop unauthorized use of public lands as it pertains to the illegal excavation and removal of cultural resources.		*		*	*

\*Denotes that the objective helps to meet the specified goal.



## **CHAPTER 4 - LAND ALLOCATION, LAND CLASSIFICATION, WATER SURFACE, AND PROJECT EASEMENT LANDS**

### **4.1 LAND ALLOCATION**

All lands at USACE water resource development projects are allocated by USACE into one of four categories in accordance with the congressionally authorized purpose for which the project lands were acquired. There are four possible categories of allocation identified in USACE regulations including Operations, Recreation, Fish and Wildlife, and Mitigation. At John Martin Reservoir, the only land allocation category that applies is Operations, defined as those lands that are required to operate the project for the primary authorized purposes of flood control and irrigation/water conservation. The remaining allocations of Recreation, Fish and Wildlife, and Mitigation would apply only if lands had been acquired specifically for these purposes. The fee simple federal estate (lands owned by USACE) at John Martin Reservoir is calculated to be 20,467, all of which is allocated to Operations.

### **4.2 LAND CLASSIFICATION**

Previous versions of the John Martin Reservoir Master Plan included land classification criteria that were similar to the current criteria. These prior land classifications were based more on projected need than on actual experience, which resulted in some areas being classified for a type of use that has not, or is not likely to occur. Additionally, in the 40 plus years since the previous Master Plan was published, wildlife habitat values, surrounding land use, and regional recreation trends have changed giving rise to the need for revised classifications. Refer to Table 8.1 in Chapter 8 for a summary of changes from the prior land classifications to the current land classifications.

#### 4.2.1 Current Land Classifications

USACE regulations require project lands to be classified in accordance with the primary use for which project lands are managed. There are six categories of classification identified in USACE regulations:

- Project Operations
- High Density Recreation
- Mitigation
- Environmentally Sensitive Areas
- Multiple Resource Management Lands
- Water Surface

The land and water surface classifications for John Martin Reservoir were established after taking into account public comments, input from key stakeholders

including elected officials, city and county governments, and lessees operating on USACE land. Additionally, public comment and the trends analysis provided in the SCORP were used in decision making. Maps showing the revised land classifications can be found in Appendix A. Each of the land classifications, including the acreage and description of allowable uses is described in the following paragraphs.

An important note concerning land and water acres at John Martin Reservoir concerns the pool fluctuation. The acres for each classification are based on the conservation pool elevation, but as water level falls the land classification covers the area from the fee boundary to the water line (see Figure 6.1 Low Water Map for John Martin Reservoir). Thus, the land classifications extend to the water's edge and all management practices for the classification apply.

#### 4.2.2 Project Operations

The Project Operations classification includes the lands managed for operation of the dam, Fort Lyon Levee, project office, and maintenance yards, all of which must be maintained to carry out the authorized purpose of flood control. Regardless of any limited recreation use allowed on these lands, the primary classification of Project Operations will take precedent over other uses. There are 514 acres of Project Operations land specifically managed for this purpose.

#### 4.2.3 High Density Recreation

High Density Recreation lands are developed for intensive recreational activities for the visiting public including day use areas, campgrounds, marinas and related concession areas. Recreation development by lessees operating on USACE lands must follow policy guidance contained in USACE regulations at Engineering Regulation (ER) 1130-2-550, Chapter 16. That policy includes the following statement:

*“The primary rationale for any future recreation development must be dependent on the project’s natural or other resources. This dependency is typically reflected in facilities that accommodate or support water-based activities, overnight use, and day use such as marinas, campgrounds, picnic areas, trails, swimming beaches, boat launching ramps, and comprehensive resort facilities. Examples that do not rely on the project’s natural or other resources include theme parks or ride-type attractions, sports or concert stadiums, and standalone facilities such as restaurants, bars, motels, hotels, non-transient trailers, and golf courses. Normally, the recreation facilities that are dependent on the project’s natural or other resources, and accommodate or support water-based activities, overnight use, and day use, are approved first as primary facilities followed by those facilities that support them. Any support facilities (e.g., playgrounds, multipurpose sports fields, overnight facilities, restaurants, camp stores, bait shops, comfort stations, and boat repair facilities) must also enhance the recreation experience, be dependent on the resource-based facilities, and be secondary to the original intent of the recreation development...”*

Lands classified for High Density Recreation are suitable for the development of comprehensive resorts. The regulation cited above defines Comprehensive Resort as follows:

*“Typically, multi-faceted developments with facilities such as marinas, lodging, conference centers, golf courses, tennis courts, restaurants, and other similar facilities.”*

At John Martin Reservoir there are 1,307 acres classified as High Density Recreation classification. The current High Density Recreation Areas at John Martin Reservoir are Lake Hasty Campground and the Point Campground. Chapter 5 contains a description for each of the High Density Recreation areas.

#### 4.2.4 Mitigation

The Mitigation classification is used only for lands allocated for mitigation for the purpose of offsetting losses associated with the development of the project. There are no lands at John Martin Reservoir with this classification.

#### 4.2.5 Environmentally Sensitive Areas.

Environmentally Sensitive Areas are lands where scientific, ecological, cultural, and aesthetic features have been identified. At John Martin Reservoir 227 acres have been classified as Environmentally Sensitive Areas (ESA), primarily for the protection of sensitive habitats or cultural resources. Each of these areas is discussed in Chapter 5 of this Plan.

#### 4.2.6 Multiple Resource Management Lands.

The Multiple Resource Management classification is divided into four sub-classifications identified as Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas. A given tract of land may be classified using only one of these sub-classifications. The selected sub classification shall reflect the dominant use of the land. Typically, Multiple Resource Management Lands support only passive, non-intrusive uses, such as natural surface trails, hunting, fishing, and wildlife observation, with very limited facilities or infrastructure. Where needed, some areas may require basic facilities that include, but are not limited to minimal parking space, a small boat ramp, and/or primitive sanitary facilities. There are 8,602 acres of land under this classification at John Martin Reservoir. The following paragraphs list each of the sub-classifications, and the number of acres and primary uses of each.

- Low Density Recreation. These are lands that may support passive public recreational use (e.g., fishing, hunting, wildlife viewing, natural surface trails, hiking, etc). There are no acres under this classification at John Martin Reservoir.
- Wildlife Management. This land classification applies to lands managed primarily for the conservation of fish and wildlife habitat. These lands generally include comparatively large contiguous parcels, most of which are located

within the flood pool of the lake. Passive recreation uses such as natural surface trails, fishing, hunting, and wildlife observation are compatible with this classification unless restrictions are necessary to protect sensitive species or to promote public safety. There 8,602 acres of land included in this classification at John Martin Reservoir.

- Vegetative Management. These are lands designated for stewardship of forest, prairie, and other native vegetative cover. Passive recreation activities previously described may be allowed in these areas. There are no acres of land included in this classification at John Martin Reservoir.
- Future or Inactive Recreation. These are lands with site characteristics compatible with High Density Recreation development, but the development either never took place or was minimal. These areas are typically closed to vehicular traffic and will be managed as multiple resource management lands until development takes place. There are no acres of land included in this classification at John Martin Reservoir.

**Table 4.1 Land Classification Acres at John Martin Reservoir**

CLASSIFICATION	ACRES
Project Operations	514
High Density Recreation	1,307
Environmental Sensitive Areas	227
Multiple Resource Managed Lands Low Density Recreation	0
Multiple Resource Managed Lands Wildlife Management	8,602
Multiple Resource Managed Lands Vegetative Management	0
Multiple Resource Managed Lands Future/Inactive Recreation Areas	0
Water Surface: Restricted	30
Water Surface: Designated No-Wake	180
Water Surface: Fish and Wildlife Sanctuary (Seasonal)	2,055
Water Surface: Open Recreation	9,090

\* **Note:** These acreage figures were measured using GIS technology and may vary from official land acquisition records.

#### 4.2.7 Water Surface

USACE regulations specify four possible sub-categories of water surface classification. These classifications are intended to promote public safety, protect resources, or protect project operational features such as the dam and spillway. These areas are typically marked by USACE or lessees with navigational or informational buoys or signs, or are denoted on public maps and brochures. Refer to Appendix A for the Water Surface Classification. The four sub-categories of water surface classification include:

- Restricted. These areas are restricted to the extent that public access is not allowed for reasons of public safety, and for project operations and security purposes. The areas include the water surface upstream and downstream of the John Martin Reservoir dam. Restricted areas at John Martin Reservoir consist of areas near the dam. There are 30 acres of restricted water surface at John Martin Reservoir.
- Designated No-Wake. There are three boat ramps and no marina areas at John Martin Reservoir where no-wake restrictions are in place for reasons of public safety and protection of property. No-wake areas are also designated around ESA land use areas. A typical no-wake area is approximately 150 feet from the area, but it can vary depending on the circumstances. There are 180 acres of designated no wake water surface at John Martin Reservoir.
- Fish and Wildlife Sanctuary. This category includes annual or seasonal restrictions on areas to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning. John Martin Reservoir has 2,055 water surface acres designated as a Fish and Wildlife Sanctuary at conservation pool. These acres, set by CPW, are subject to change due to water surface area fluctuations.
- Open Recreation. This classification encompasses the majority of the lake water surface and is open to general recreational boating. Boaters are advised through maps and brochures, or signs at boat ramps and marinas, that navigational hazards may be present at any time and at any location in these areas. Operation of a boat in these areas is at the owner's risk. Specific navigational hazards may or may not be marked with a buoy. There are 9,090 acres of open recreation water surface at John Martin Reservoir and Lake Hasty.

### **4.3 PROJECT EASEMENT LANDS**

Fee title was not acquired on these lands. A limited real property interest in the form of an easement conveys to the Federal Government certain rights to use and/or restrict the use of these lands. Easement lands are typically classified as Operations Easement, Flowage Easement, and/or Conservation Easement, but each easement is



for a specific purpose. It is extremely important to examine the easement instrument any given parcel to find out exactly what interest has been conveyed, and the duration of the easement. At John Martin Reservoir, generally easements exist for flowage, roads and utilities. Road and utility easements are for the specific improvement to the property. Flowage easements, however, grant the right to temporarily flood/inundate the described land during flood risk management operations and to prohibit activities on the flowage easement that would interfere with those flood operations. Prohibited activities include placement of fill material or construction of habitable structures. Even if permissible, construction on these lands are subject to prior USACE approval. There are 4,976 acres of flowage easement lands at John Martin Reservoir.

## **CHAPTER 5 - RESOURCE PLAN**

### **5.1 MANAGEMENT BY CLASSIFICATION**

This chapter describes the management plans for each land use classification within the Master Plan. The classifications that exist at John Martin Reservoir are Project Operations, High Density Recreation, Environmentally Sensitive Areas, and Multiple Resource Management Lands, which consist of Wildlife Management, and Water Surface. The management plans describe how these project lands will be managed in broad terms.

Management of all lands, recreation facilities and related infrastructure must take into consideration the effects of pool fluctuations associated with authorized flood risk management and water conservation purposes. Management actions are dependent on congressional appropriations, the financial capability of lessees and other key stakeholders, and the contributions of labor and other resources by volunteers. The land classifications and applicable management goals for each classification for John Martin Reservoir include the following:

- Project Operations.....Goal A, E
- High Density Recreation.....Goal C, E
- Environmentally Sensitive Areas.....Goal B, D, E
- Multiple Resource Management Lands for:
  - Wildlife Management.....Goal B, E

A more descriptive and detailed plan for managing project lands can be found in the John Martin Reservoir OMP, which is an annually-updated, task and budget oriented plan identifying tasks necessary to implement the Resource Plan and achieve the goals and objectives of the Master Plan. As mentioned in Section 4.2.1, the Land Classifications extend to the water's edge and thus the management of the areas is subject to expansion based on pool level.

### **5.2 PROJECT OPERATIONS**

Project Operations is land associated with the dam, spillway, levees, lake office, maintenance facilities, and other areas solely for the operation of the project. There are 514 acres of lands under this classification, which are managed by the USACE. The management plan for this area is to continue providing physical security necessary to ensure sustained operations of the dam and related facilities including restricting public access in hazardous locations near the dam and spillway.

### **5.3 HIGH DENSITY RECREATION**

John Martin Reservoir has 1,307 acres classified as High Density Recreation. These lands are developed for intensive recreational activities for the visiting public including day use areas and campgrounds. National USACE policy set forth in ER and EP

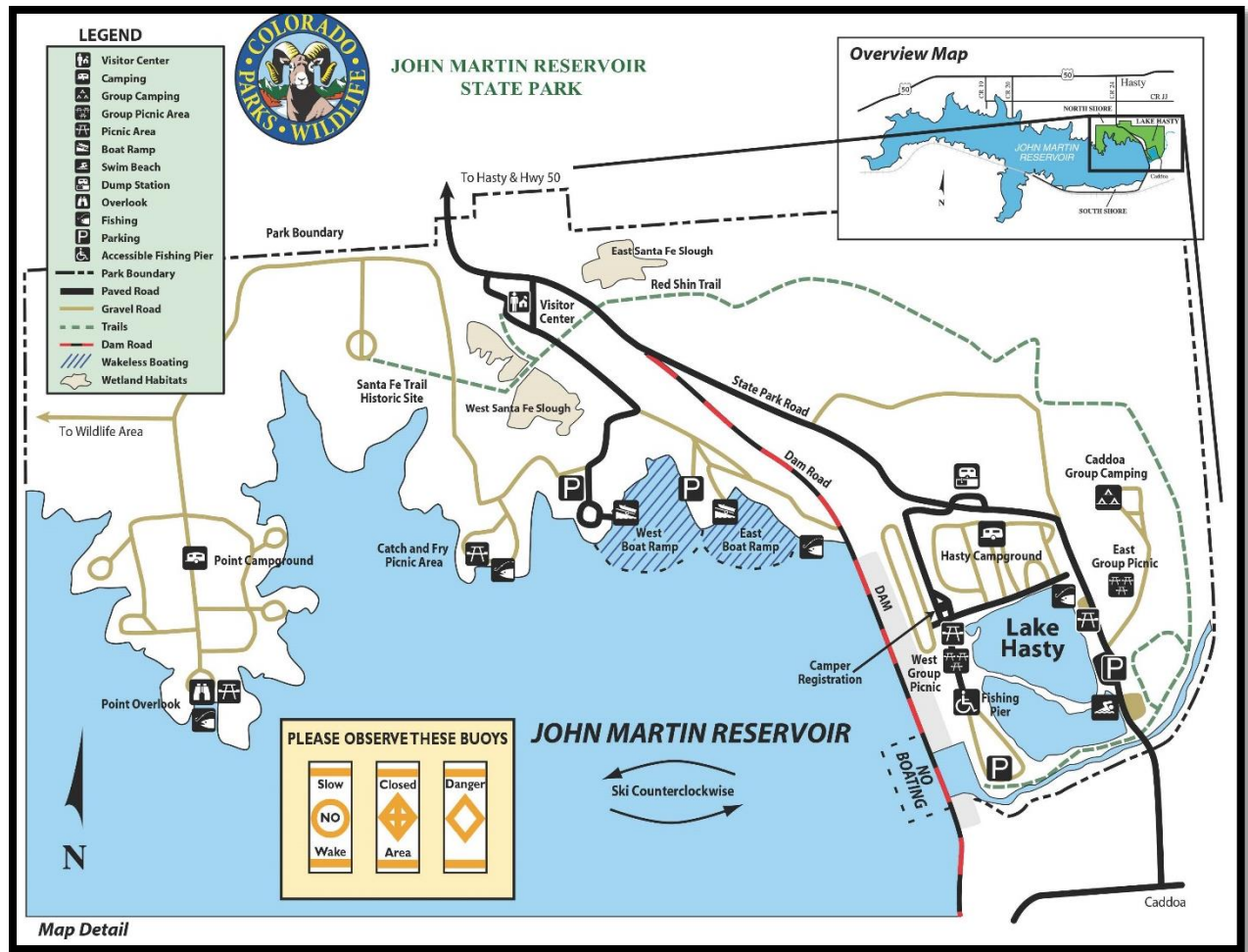
1130-2-550, Chapter 16, limits recreation development on USACE lands to those activities that are dependent on a project's natural resources and typically include water-based activities, overnight use, and day use such as marinas, campgrounds, picnic areas, trails, swimming beaches, boat launching ramps, and comprehensive resorts. Examples of activities that are not dependent on a project's natural resources include, theme parks or ride-type attractions, sports or concert stadiums, and stand-alone facilities such as restaurants, bars, motels, hotels, and golf courses.

All High Density Recreation areas at John Martin Lake are leased to the CPW through outgrants issued in the form of permits or leases. The CPW is responsible for the operation and maintenance of their leased areas, and although USACE does not provide direct maintenance within any of the leased locations, it may occasionally lend support where appropriate. The USACE reviews requests and ensures compliance with applicable laws and regulations for proposed activities in all leased HDR areas. USACE works with partners to ensure that recreation areas are managed and operated in accordance with the objectives prescribed in Chapter 3.

The following is a description of the parks operated by CPW on USACE lands at John Martin Reservoir, which are classified into two types; parks that are highly developed, and parks that have basic facilities and limited development. Refer to Appendix A for maps showing existing parks and facilities at John Martin Reservoir.

#### 5.3.1 Developed Parks

In accordance with past visitation rates and recent outdoor recreation trends documented in the SCORP, all forms of outdoor recreation in the State of Colorado are a priority. In Colorado and nationwide, participation in non-motorized activities such as hiking, cycling, and camping have grown, as has motorized activities such as power boating, snowmobiling, and off-road vehicle use. Other increasing recreational trends include day-trip fishing, while hunting overall nationwide has steadily decreased. While participation in fishing is usually in short trips, hunting trips are typically longer. John Martin Reservoir offers opportunities for a large variety of recreational activities and has capacity to support even more. As noted in Chapter 2, demand for most activities and amenities at the Class A parks is growing. At John Martin Reservoir, USACE partners with CPW to manage the recreational facilities, as shown in Figure 5.1.



**Figure 5.1 John Martin Reservoir State Park Map** (Source: CPW)

John Martin Reservoir has one developed park, Lake Hasty Campground, which is leased to CPW who is wholly responsible for its operation and management. USACE intends to continue cooperation with CPW as they maintain or improve this area. USACE encourages partnerships with agencies who lease and manage parks to respond to increasing demands and build on the current quality of USACE parks for present and future visitor. The Lake Hasty Campground features 109 campsites with electric service (20, 30 and 50 amps). Back-in sites are at least 60 feet long, and pull-through sites are at least 120 feet long, accommodating any size RV, motor home, trailer, camper or tent. Natural or man-made shade is available at each site at Lake Hasty campground. Potable water is available in the Lake Hasty Campground, and the dump station is across the road. The campground is accessible 24 hours a day year-round.



**Photo 5.1 Lake Hasty** (USACE Photo)

### 5.3.2 Basic Facilities Parks

John Martin Reservoir has one basic facilities park, The Point Campground, which is leased to and managed entirely by CPW. USACE will continue to cooperate with our partners as they maintain or improve existing facilities such as day use areas and access points. Trails within and between parks, which are in demand, should be considered throughout the project lands. The Point Campground has basic sites with no RV hookups. The sites provide scenic views of the reservoir.

**Table 5.1 John Martin Reservoir Parks and Amenities**

	Day Use Area	Camping-Basic	Camping-Water and Electricity	Group Pavilion(s)	Picnic Facilities	Playground	Swim Beach	Trail(s)	Fishing Dock/Pier	Drinking Fountain	Restrooms-Vault	Restrooms-Flushing	Restrooms-Flushless	RV Dump Station	Boat Ramp	Boat Rental(s)
Lake Hasty	X		X		X		X	X	X			X	X	X		
The Point Campground	X	X													X	
Managed By CPW																

Source: USACE Visitor Map, 2016

### 5.3.3 Trails

Trail facilities are a growing recreational activity throughout the United States. While there are numerous places to hike at John Martin Reservoir, the only specified trail is the Red Shin Hiking Trail. The trail begins at the stilling basin below the dam and winds through the park to the Santa Fe Historic Site on the north shore of the reservoir. The trail is approximately 4.5 miles long and provides excellent opportunities for wildlife viewing. The trail is named after the legend of Red Shin, a Cheyenne warrior who lived in the Arkansas Valley around 1833. Compelled by a quarrel with another warrior over an Indian maiden, Red Shin armed himself with two flintlock muskets, a tomahawk, bow and arrows, and butcher knives. He then took refuge atop a tall rock formation located to the north of present-day Lake Hasty Campground. Other warriors joined the dispute and quickly attacked Red Shin from the valley below. Shooting arrows at his attackers with great accuracy, Red Shin convinced the attacking warriors to give up their futile assault or their lives would soon be lost. Ever since, the Dakota Sandstone formation found near the trail has been called Red Shin Standing Ground.





**Photo 5.2 Red Shin Standing Ground** (USACE Photo)

## **5.4 MITIGATION**

This classification is used for lands that were acquired specifically for the purpose of offsetting losses associated with development of the project. There are no acres at John Martin Reservoir under this classification.

## **5.5 ENVIRONMENTALLY SENSITIVE AREAS (ESA)**

ESA's are areas where scientific, ecological, cultural or aesthetic features have been identified. Designation of these lands is not limited to just lands that are otherwise protected by laws such as the Endangered Species Act, the National Historic Preservation Act, or applicable state statutes. These areas must be managed to ensure they are not adversely impacted. Typically, depending on the resource being protected, limited or no development of public use facilities is allowed on these lands. No agricultural or grazing uses are permitted on these lands unless necessary for a specific resource management benefit, such as prairie restoration and management. These areas are typically distinct

parcels located within another and perhaps larger land classification. There are 227 acres at John Martin Reservoir under this classification. The acreage in these areas are lands designated as containing significant cultural resources, and land that is designated as habitat for the endangered Interior Least Tern and threatened Piping Plover. Management of these areas is a cooperative effort between CPW and USACE and is based on the resource being protected. Section 6.1 of this Plan contains further detail for the management of threatened and endangered species occurring or likely to occur within an ESA. USACE has an Endangered Species Management Plan and has co-drafted the Tern and Plover Management Plan with CPW that is informed by the 2001 Biological Opinion. Successful management of both the listed species and invasive species will require coordination and cooperation between CPW, USACE, and the public.

## **5.6 MULTIPLE RESOURCE MANAGEMENT LANDS**

Multiple Resource Management Lands (MRML) are organized into four sub-classifications. These sub-classifications are: Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas. The following is a description of each sub-classification's resource objectives, acreages, and description of use.

5.6.1 Low Density Recreation. These lands have minimal development or infrastructure that support passive public use such as hiking, nature photography, bank fishing, and hunting. Since these lands are typically adjacent to private residential developments, hunting is only allowed in select areas that are a reasonable and safe distance from adjacent residential properties. These lands are typically open to the public, including adjacent landowners, for pedestrian traffic and are frequently used by adjacent landowners for access to the shoreline near their homes. Prevention of unauthorized use on this land, such as trespassing or encroachment, is an important management and stewardship objective for all USACE lands, but is especially important for lands in close proximity to private development. Future management of these lands calls for maintaining a healthy, ecologically-adapted vegetative cover to reduce erosion and improve aesthetics. Maintenance of an identifiable property boundary is also a high priority in these areas. There are no acres classified as Low Density Recreation under this classification.

5.6.2 Wildlife Management. These are lands designated for the stewardship of fish and wildlife resources and are managed primarily by CPW through a license agreement with USACE. There are currently 8,602 acres of land under this classification at John Martin Reservoir, however, ESA's also support wildlife. Management efforts focus on producing native wildlife food and habitat. Prescribed burns are conducted when conditions permit. Supplemental forage is provided through management of crop leases and food plot plantings. Hunting and fishing activities are regulated by federal and state laws. A priority will be given to accomplishing the Natural Resources Management objectives identified in Chapter 3 for the Wildlife Management areas at John Martin Reservoir.

There are federally-listed threatened or endangered species that could and do utilize habitat within the John Martin Reservoir area. Therefore, any work conducted on this project will be in accordance to the Endangered Species Act and will be appropriately coordinated with the USFWS. The species of focus within this area of consideration are animals listed as a threatened or endangered species under the Endangered Species Act. These species (Table 2.5) will continue to receive attention to ensure they are managed in accordance to their habitat needs.

Non-game wildlife is also managed on Wildlife Management areas. Non-game programs, such as songbird nest box construction and installation of bat boxes can be performed on an intermittent basis. USACE will cooperate with CPW in support of these initiatives in order to provide some form of management for non-game species.

#### *South Shore Area*

For several decades a portion of the south shoreline within approximately one-mile of the south end of the dam has been used extensively by the public for lakeside recreation in the form of camping, swimming, picnicking and boating. The entire area is located within the boundary of the CPW-managed John Martin Reservoir State Wildlife Management Area (SWA). CPW rules for the area allow camping on the SWA in association with hunting, fishing and nature study activity, but not as a heavily used shoreline campground associated with boating, swimming and general lakeside camping. It is important for the area to continue to be managed for wildlife management purposes, but management measures are needed to ensure that continued use of the area for shoreline recreation activity is compatible with the SWA and that basic public safety, waste disposal, and sanitation are provided. USACE and CPW will work together to develop a management plan for the area in question that recognizes the two-fold need of managing the SWA for its intended purpose while at the same time making provisions for continued shoreline recreation. Robust public involvement will be an integral part of developing a management plan for the area.

5.6.3 Vegetative Management. These are lands that have vegetative types considered to be sensitive and needing special classification to ensure success. There are no lands currently identified at John Martin Reservoir for vegetative management purposes.

5.6.4 Future/Inactive Recreation Areas. These are areas with site characteristics compatible with potential future recreational development or recreation areas that are closed. Until there is an opportunity to develop or reopen these areas, they will be managed for multiple resources. There are no acres classified under this sub-classification at John Martin Reservoir.

## **5.7 WATER SURFACE**

At conservation pool level of 3,851 feet NGVD there are 11,484 acres of surface water. Most navigational and informational buoys are managed by CPW. USACE is responsible for placing or coordinating the restricted area in front of the dam. These buoys help mark hazards, swim beaches, areas where boats must keep-out, and no-wake areas.

### **5.7.1 Restricted**

Restricted areas prohibit boats and are located near the dam for project operations, safety, and security purposes. Water surface zoned as restricted totals approximately 30 acres. There are no restricted areas at Hasty Lake swim beach as there are no motorized watercraft on the lake. CPW places seasonal restriction/closure of areas when the piping plover and least tern are nesting.

### **5.7.2 Designated No-Wake**

No-wake areas are located near boat launch areas for the safety of launching and loading boats or personal watercraft. An additional No-Wake area exists at the narrow channel at the railroad trestle when the water level is high enough for that area to be boatable. No-Wake areas are created near the south shore and around the islands on the north side of the lake to protect the shoreline and islands, which are nesting habitat for listed birds, from erosion and inundation from wave action. During nesting season these areas become Restricted and are subject to those rules and regulations. Approximately 180 total acres of John Martin Reservoir is designated for no-wake.

### **5.7.3 Fish and Wildlife Sanctuary**

These areas are managed with annual or seasonal restrictions to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning. John Martin Reservoir has 2,055 acres of water surface at conservation pool under this classification. These surface acres are managed by CPW and are subject to change based on pool level.

### **5.7.4 Open Recreation**

The remaining lake area not in the above classifications is open to recreational use. No specific zoning exists for these areas, but there is a buoy system in place to help aid in public safety. Approximately 9,090 total acres of John Martin Reservoir, including Lake Hasty, is zoned for open recreation.

## **5.8 PROJECT EASEMENT LANDS**

Future management of the Flowage Easement lands at John Martin Reservoir includes routine inspection of these areas to ensure that USACE property rights and interests specified in the easement instrument are protected. On the majority of easement lands at John Martin Reservoir, the interest that was acquired by USACE is the right to inundate the property in the event of flood risk management operations. This right carries

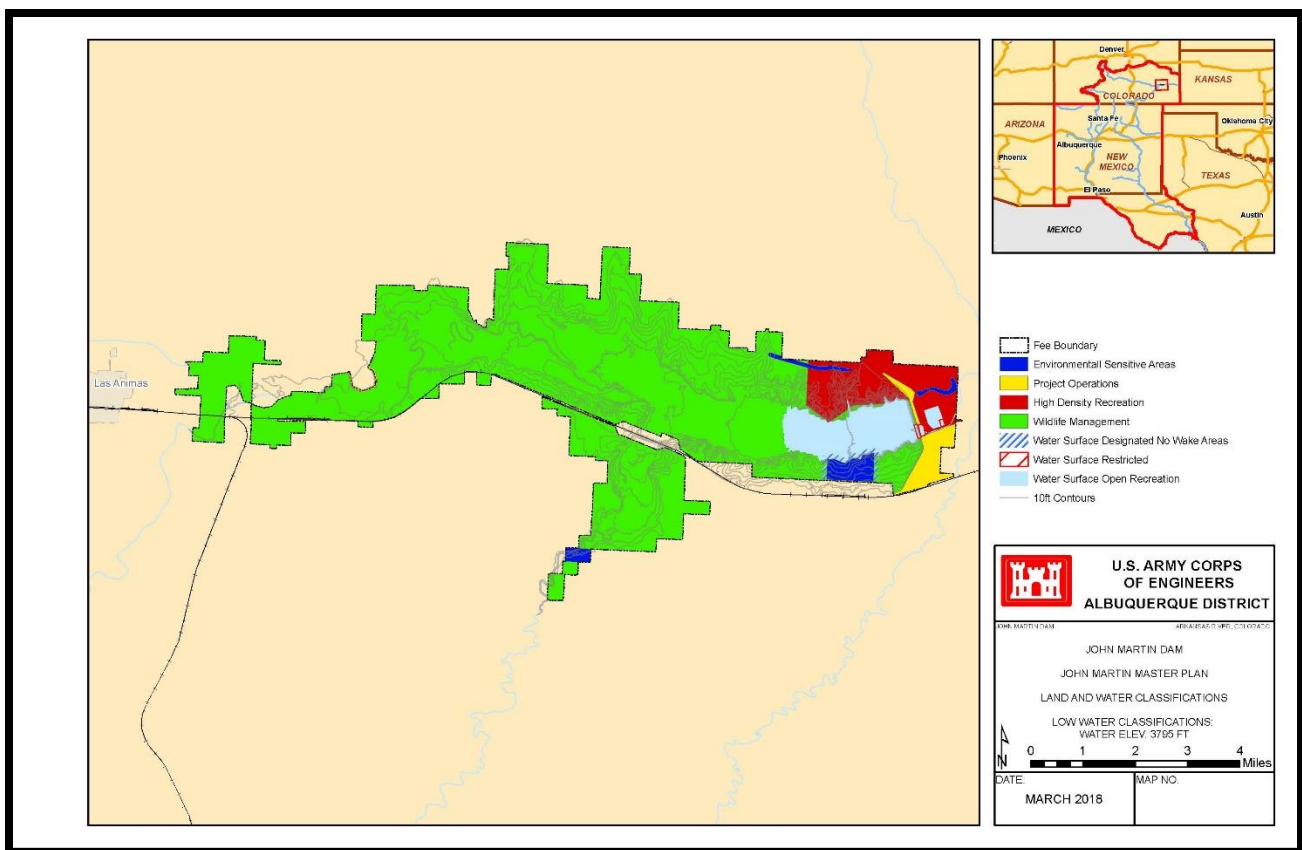
with it restrictions on land use, including construction of any improvement that may interfere with authorized project purposes. There are 4,976 acres of flowage easement lands at John Martin Reservoir.

## CHAPTER 6 - SPECIAL TOPICS/ISSUES/CONSIDERATIONS

### 6.1 THREATENED AND ENDANGERED SPECIES AND LOW WATER CONDITIONS

John Martin Reservoir provides a unique habitat for the endangered Interior Least Tern and the threatened Piping Plover. These birds nest on the sandy shores from April to August, predominantly on the south shore. As the water recedes and more shoreline is exposed below the conservation pool, more nesting area becomes available.

The recent 5-Year Review by USFWS indicated that interior least tern numbers have increased substantially since listing. Most of this increase is along the Lower Mississippi River. The review recommends delisting the tern pending (a) demographic modeling to ensure population trends are sustainable over time and (b) agreements with federal river management agencies to continue current conservation measures to support recovery of the species.

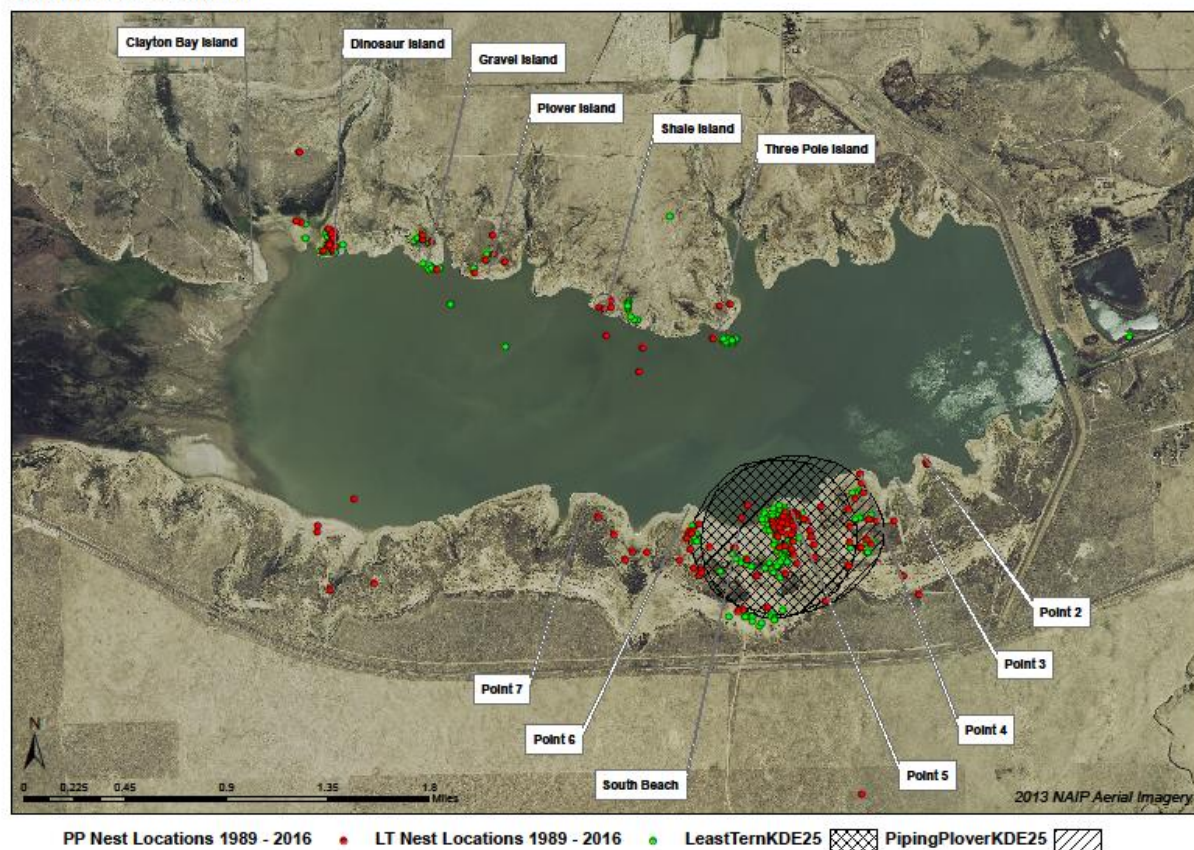


**Figure 6.1 Low Water Map for John Martin Reservoir – For illustration purposes only. Does not reflect actual acres.**



Currently, there is a 2001 Biological Opinion (BO) and an Albuquerque District Tern and Plover Management Plan (see Appendix C), which informs the management plans developed by the CPW as part of their lease requirement with USACE. An EA was completed to address the leasing of park areas to CPW at John Martin Reservoir. The EA provides extensive information concerning the management of the birds and their habitat. Bird management and protection consists of fencing off nests as they appear on the south shore. The land classification for the major nesting areas on the south shore as identified by the 25 percent kernel density analyses have been converted from MRML-WM to ESA to give the birds and their nesting habitat the most protection possible. No-wake areas have also been designated around the islands where birds tend to nest near the north shore. A kernel density is a statistical measurement to estimate the probability of an event based on a data sample, in this case the probability that the birds will nest in these areas is based on past data collection. See Appendix C for the current CPW and USACE criteria for erecting Piping Plover and Interior Least Tern exclosures at John Martin Reservoir dated February 2015.

### Piping Plover and Least Tern 25% KDE John Martin Reservoir



**Figure 6.2 Kernel Density at 25 Percent for Piping Plovers and Least Terns**





**Photo 6.1 Signage for Piping Plovers and Least Terns** (USACE Photo)

## **6.2 BIRD WATCHING**

As mentioned in Chapter 2, John Martin Reservoir is designated as an Important Bird Area by the Audubon Society and supports a diverse population of migratory and non-migratory birds, thus bird watching in the area is very popular. Considered an oasis in the desert for migrating wildfowl and native species alike, the area is one of the only areas with a significant water source in the southeastern corner of Colorado.

In May of 2016 the eleventh annual Bent on Birding and Heritage Festival in the Southeast was held in the area. During this time, 111 different species of birds were identified in one day including one species that was not previously believed to migrate in

the area. A professional biologist led groups through John Martin Reservoir on an exploration of birds and their habitat, and to explore the many cultural sites throughout the project lands. Additionally, each Christmas, groups of bird enthusiasts use the area for an annual Christmas bird count. These activities bring hundreds of visitors to John Martin Reservoir each year.

### **6.3 ACCESS AND PRIVATE PROPERTY**

One of the challenges at John Martin Reservoir concerns access to the wildlife area on the south side of the reservoir, specifically in the area of the train trestle. A portion of the fee boundary at conservation pool is under water on the south side of the reservoir. This area was historically accessible, however, a private landowner purchased acreage along the south shore, thus cutting off access, creating a situation where, in order to access lands in the southwest wildlife areas, visitors must pass over private land. The wildlife area provides primitive recreational camping, fishing and hunting and is covered under CPW's license agreement, but the situation is such that it provides no public access from the southeast side of the reservoir. This has been a long-standing problem and as time and funding permits, USACE will seek a solution.



**Photo 6.2 Train Trestle on South Side of Reservoir (USACE Photo)**

## 6.4 WATER SUPPLY AND IRRIGATION

Storage of water in the reservoir began in January 1943 and in December 1948 the Colorado and Kansas state governments signed the Arkansas River Compact. This agreement governed the two states' access to the Arkansas River's water, including water stored in John Martin Reservoir. In 1980, the two states developed a plan - the Arkansas River Compact - allocating water in the reservoir in a 60/40 split between Colorado and Kansas, respectively.

The Compact dictates a winter and a summer storage period. During the winter storage period, November 1 to March 31, most of the reservoir inflow is stored. Prior to 1980, provisions were made for the release of stored water, without reference to the volume of stored water assigned to each state. To ensure that each state received its share of stored water, release demands by each state were made concurrently. Although the Compact was to ensure that Colorado and Kansas irrigators received their legal shares of Arkansas River water, it did not result in the most efficient utilization possible of the water in its control. Prior to 1980, after the winter storage period, reservoir storage usually was drawn down to empty or almost empty very early in the irrigation season, often by the middle of April. From 1955 through 1979, reservoir storage was completely depleted by April 30 in 15 of the 25 years.

The top of conservation is 3851 ft (volume of 330,703 acre-ft), top of flood control is 3870 ft (volume of 599,852 acre-ft), and top of dam is 3,880 ft (volume of 788,104 acre-ft). Pool of record is 455,649 acre-feet with elevation 3860.4 on 9 May 1999. Current volume, as of 18 December 2017, is 265,256 acre-feet (3844.9).

In the initial phase of the project, land was purchased that would be inundated by the reservoir. In a few cases, the landowners preferred to sell whole tracts as opposed to being left with small sections. This resulted in the acquisition of several agricultural fields with their associated irrigation shares, which were above the upper guide contour. These fields have continued to be managed as irrigated farm ground so as to provide a food source for wildlife in years where normal food sources are limited.

These fields have been operated by USACE at times, but are currently operated through sharecrop leases under the CPW license. The sharecrop agreements require the farmers to leave a certain percentage (typically 10-20%) of the crop to provide for wildlife in case of a poor year.

CPW has been granted water rights at John Martin Reservoir. The water rights granted to CPW in the license are 107 shares of capital stock in Fort Lyon Canal Company and 128 shares of capital stock in the Consolidated Extension Canal Company. Also in accordance with the license, USACE reserves the right to annually withdraw and use up to 20 acre feet of the water rights granted to CPW in the license.



## **6.5 LAKE HASTY RECREATIONAL AREA**

Lake Hasty is located on the east side of the dam and is included in the John Martin Reservoir State Park. It is a 73-acre former borrow area excavated during dam construction. Approximately rectangular in form, the lake is approximately 2,000 feet long and 1,500 feet wide. A gravel bar forms a diagonal partition across most of the lake, providing food-producing shallows and bank fishing access. A fair amount of fishing hours occur on Lake Hasty. Fish are stocked by CPW, who manage both Lake Hasty and the adjacent Lake Hasty Campground. In June 1980, the John Martin Master Plan was amended to allocate a portion of Lake Hasty recreational area for commercial concession purposes. To date, no concession facilities have been constructed.

## **CHAPTER 7 - PUBLIC AND AGENCY COORDINATION**

### **7.1 PUBLIC AND AGENCY COORDINATION OVERVIEW**

The USACE is dedicated to serving the public interests in support of the overall development of land uses related to land management for cultural, natural, and recreational resources of John Martin Reservoir. An integral part of this effort is gathering public comment and engaging stakeholders in the process of planning. USACE policy guidance in ER and EP 1130-2-550 requires thorough public involvement and agency coordination throughout the master plan revision process including any associated environmental assessment process. Public involvement is especially important at John Martin Reservoir to ensure that future management actions are both environmentally sustainable and responsive to public outdoor recreation needs. The following milestones provide a brief look at the overall process of revising the John Martin Reservoir Master Plan.

The USACE began planning to revise the John Martin Reservoir Master Plan in September 2015. The objectives for a master plan revision are to (1) update land classifications to reflect changes in USACE land management policies since the 1974 update, (2) prepare new land and recreation management objectives, (3) prepare a resource management plan for each land classification category, and (4) update the Master Plan to reflect new agency requirements for master plan documents in accordance with ER 1130-2-550, Change 7, January 30, 2013 and EP 1130-2-550, Change 5, January 30, 2013.

### **7.2 INITIAL STAKEHOLDER AND PUBLIC MEETINGS**

The first action was a scheduled public scoping meeting, providing an avenue for public and agency stakeholders to get information, ask questions, and provide comments. The public scoping meeting was held on 27 October 2016 at the Colorado Division of Parks and Wildlife office in Lamar, Colorado. The Albuquerque District placed advertisements on the USACE webpage, social media, and print publications two weeks prior to the public scoping meeting.

USACE staff hosted the workshop, which was conducted in an open format. Participants were asked to sign in at a table where staff provided the participants with information regarding the structure of the scoping meeting and comment forms. After signing in, the Project Manager conducted a PowerPoint presentation for the Master Plan Revision to convey information about the following topics:

- Public Involvement Process
- Project Overview
- Overview of the NEPA process
- Master Plan and current land classifications
- Process for Submitting Comments



At the conclusion of the presentation USACE representatives were available to answer questions and receive written comments at information tables. Interested persons had the opportunity to comment within 30 days of the meeting about the project using a variety of methods, including the following:

- Filling out a comment form at the open house
- Taking a comment form home to be returned at a later date
- Submitting a comment using electronic mail
- Submitting a comment and mailing it in on letterhead or choice of paper
- Submitting comment via e-mail

Six people not including USACE personnel attended the 27 Oct 2016 scoping meeting: two representatives from CPW, two public official representatives, one person from the local water district, and one member of the public at large. The CPW was the only comment received following this public scoping meeting, with the focus being on the management issues of the Interior Least Terns and Piping Plovers, as well as wildlife areas licensed to the State. Because the CPW manages most of the lands at the John Martin Reservoir, USACE included the agency in the alternatives workshop held 23 February 2017. During this meeting, land classification was discussed as part of the master planning process, and USACE committed to sending the new land classification map to the State for additional comment. Further discussion arose concerning future management of areas, and while extremely important, is not part of the master planning process.

### **7.3 PUBLIC AND AGENCY REVIEW OF MP, EA, AND FONSI**

The final draft Master Plan and Environmental Assessment was made available for public and agency review online beginning 09 February 2018. The process of announcing the availability of the draft final Master Plan and the requirements for submitting comments included sending an announcement via letters and e-mails to agencies and public officials, and e-mailing announcements to those who previously attended meetings or submitted comments leaving their e-mail address. A press release was submitted simultaneously to local and regional news agencies for publication.

Public and agency comments for the draft final master plan were accepted through 12 May 2018. During this timeframe, five written comments were received; one from the lake staff, one from the general public, two from the Southern Ute and Cheyenne & Arapaho Tribes, and one from the CPW. The State Historic Preservation Officer (SHPO) also provided comment for the Plan. Table 7.1 summarizes the comments and USACE responses. The final version of the Master Plan, EA and FONSI is signed by the District Engineer for implementation. The final versions will be posted on the Albuquerque District website.

**Table 7.1 JOHN MARTIN RESERVOIR PUBLIC COMMENTS AND RESPONSE**

<b>FROM</b>	<b>COMMENT</b>	<b>RESPONSE</b>
Lake Staff	Map JM17MP-OM-1: This map shows that the south portion of the wing dam and road are outgranted to CPW under the wildlife license. I do not believe that this is the case. If it is, we should modify the new license to exclude it. It should follow the shape of the Project Operations/Wildlife Management areas shown on Map JM17MP-OC-09.	Concur the maps should be consistent. We need to change Map JM17MP-OM-1 to account for the wing dam.
SHPO	Our environmental review unit is short staffed by approximately half and we will not be able to provide detailed comment on the proposed John Martin Reservoir Master Plan. That said, I do have a question regarding whether USACE sought comment from our office for the John Martin Reservoir Operational Management Plan (OMP). The OMP is described on page 1-3 of the MP as the "implementation tool" and therefore may be considered an undertaking with the potential to effect historic properties if any such properties are present. Did USACE complete a programmatic agreement for this earlier effort?	The OMP is an internal planning document that is based on the Master Plan. The OMP covers recreation and Natural Resources projects for the current year, plus 4 years into the future. USACE consults on each individual project. A Programmatic Agreement (PA) is scheduled for completion in 2019, and with that in place and the up-to-date Master Plan, USACE may consult on the entire OMP (or at least all current year projects). In the meantime, our cultural resources folks will continue to consult on individual projects.

Citizen	When doing project activities at the reservoir such as silt mapping, consideration should be made to complete tasks that will have the least disturbance of wildlife.	The master plan is a broad overview of the resources and land use designations at John Martin Reservoir. The items addressed within your comments are in regards to specific management actions.
	Clean up of roadways of deadfall and other tree issues should be done in a manner that maintains habitat for wildlife. Roads that are closed to cars should be open for walkers.	The USACE follows all applicable laws in regards to projects conducted to include but not limited to the Fish and Wildlife Coordination Act, NEPA, and the endangered species act. Endangered species management is required to take precedence to other wildlife and recreation management. The USACE is focusing on invasive species eradication and native plant restoration and intends to plant more native species within the project which will provide increased habitat opportunities for native species. The USACE closes areas and roads when Dam operations have the potential to impact public life and safety and in order to be in compliance with the Endangered Species Act regulations. Please visit our Facebook

		page for updates on volunteer opportunities and habitat work.
	The traditional location of the endangered Piping Plover and threatened least tern protection areas needs better protection and a larger buffer zone for the birds. It needs some serious support for those with the expertise on creating a reproductive zone for those birds	Noted – while the Master Plan does not get into specifics of management, the new land classification of ESA's assign the areas for most protection. USACE and CPW continue to work together to ensure the highest level of protection for these listed birds

	With the discussion of the above, it also means that the number of campers on the south shore needs to be controlled so that campers can not encroach into that protected area by simply walking up the shoreline.	Noted
	Request no tree removal.	Noted – please see previous response concerning trees and roads. These are management issues and careful consideration is done before removal of vegetation in light of the primary mission of the reservoir, environmental stewardship, and public health, safety and welfare.
	Request occasional winter access by way of an escorted tour to either a temporary or permanent blind on the south shore, as well as an escorted tour for viewing the nesting birds in the spring.	Noted – while this is a management issue, USACE endeavors to work with CPW on creating multiple recreational outlets as money and personnel allow.
Southern Ute Indian Tribe	We have read the master plan, we have noted that a cultural resources management plan (page 28) will be developed. We would like to consult and participate when it begins. Our oral histories tell us that we were once in that area.	Concur
Cheyenne & Arapaho Tribes	Concur with John Martin Reservoir Master Plan	
CPW	ES-1: “The CPW also received an early draft of this Master Plan for further comment.” --No plan was received at either local Park or Wildlife office. We are uncertain if/where the draft was sent	Link to early draft availability was sent to both the Lamar office and the Colorado Springs office

	1.9.3 Outgrants: References two licenses issued to Colorado Game and Fish, now CPW (specifically one for construction and maintenance of a drainage ditch). – Current staff is unaware of a drainage ditch portion of this license. Can you provide more information about this?	Concur - amended
	2.2: Use of the term “abandoned” for farm ground north of the USACE lands, this seems out of place. The land is still owned and operated by a farmer or corporation. The land has been converted from irrigated land to either dry land farming or revegetated due to dry-up requirements...not “abandoned”. We feel this is a misuse of the terms.	Concur - restated
	Table 2.5: Occurrence of Black-footed ferret on the Project is very low potential. There are no known populations within Bent County at this time. Re-introduction has taken place in Prowers and Baca Counties. Mention of another endangered species in reference to this management plan seems erroneous.	Concur - removed
	Table 2.6: The table lists Spiny Water Flea as an invasive species at John Martin Reservoir. – John Martin Reservoir does have a version of water flea ( <i>Daphnia lumholtzi</i> ) which is far less of a problem for the fishery than the Spiny Water Flea that is referenced. In 2017 <i>Daphnia lumholtzi</i> was removed from the list of invasive species by CPW Invasive species staff within the state. This species was deemed to not be a species of great concern.	Concur - removed
	2.5.3: There is a list of catchable species provided here as well as in numerous other places in the document. The list has differences nearly each time it is mentioned. Please select one list and maintain the same species named to provide consistency thorough the document. CPW can provide an all-inclusive list of species if needed.	CPW provide list and MP and EA have been updated
	2.5.3 Camping: Electric sites (only) are available in the Lake Hasty Area. – CPW requests the removal of “Non-Electric Sites”.	Concur - amended



	<p>2.5.3 Point Campground: Sites here are considered Basic. "Primitive" sites as defined by CPW regulation are back country sites designated with a fire ring or picnic table. CPW request the use of terminology that more accurately reflects the conditions at John Martin (basic vs. primitive).</p>	<p>The CPW definition will be used/included for clarity.</p>
	<p>Table 2.16 Leases: (CDOW- License- 19,611) CPW suggests "Outgranted Lands" vs. "Leases" in the heading just to clean up terminology.</p>	<p>Concur - Changed to "Outgrants"</p>
	<p>Table 2.17 Top Ten Recreation Activities: Please replace Salt Water Fishing with a relevant type of recreation in Colorado found within the SCORP documents. It took researching this table to find out why it makes sense to have it in this plan. It is a nationwide list not a Colorado list. CPW believes it will appear less confusing to users of the plan to add a more relevant type of recreation found within Colorado.</p>	<p>Concur - removed</p>
	<p>4.2.3 and Figure 6.1: If the management is to change from Catch and Fry to the Point Overlook south and then to the State Park Boundary during low water years, we need a full understanding of how that looks (mapped preferably). Would it be acceptable for activities currently allowed in these areas to continue while ensuring no new roads are created and vehicle access is restricted? Is the acreage mapped on Figure 6.1 below the currently mapped High Density Recreation covered under either the lease or license agreement? Based on the legal descriptions in both the lease and license agreement, it is unclear. Management of this area in low water years is dependent on which document covers this area? For example--Is this area covered under the classification of High Density Recreation or Multiple Resource Management Lands?</p>	<p>The park lease has a fixed boundary. During low water, the land between the High Density Recreation (HDR) area and the water is considered Multiple Resource Management Lands, Wildlife Management (MRML-WM). Activities allowed in the HDR area are allowed in the MRML-WM areas with the exception that no fixed or permanent facilities are allowed on WM lands. The low water map is for illustration only. All acres for this Master Plan are calculated at conservation pool.</p>

	4.2.6: Please provide clarification regarding “passive, non-intrusive uses.” This will help CPW to understand the preferred direction with regard to “Wildlife Management” on Multiple Resource Management Lands.	Amended to give examples
	Table 4.1: As a note, CPW recognizes that the acreage noted in the table is subject to change as water levels fluctuate. However, the uncertainty described above in the comments of 4.2.3 is still applicable. Which acreages change as water recedes?	All official acres assigned in this Master Plan are based on conservation pool. Because the HDR areas have a fixed boundary, as the water level decreases the remaining land classifications increase (WM, PO and ESA are the acres that will fluctuate). This means that no permanent structures can be placed on these lands.
	4.2.7 Restricted: Please add further clarification of the “Restricted Water Surface” on Lake Hasty. What does that mean and how is it restricted? In this section it is not spelled out, but later it is portrayed as the swim beach area.	Because non-motorized craft are allowed on Lake Hasty, the "Restricted" classification will be removed and acres will be amended to reflect the change.
	4.2.7 Designated No Wake Areas: Can you provide what the standard is for a No Wake Area? The claim of 180 surface acres without a point of reference seems ambiguous. CPW believes the “no wake areas” around ESA land use areas are in fact areas closed to all activity...not just no wake.	The intent of the "No-Wake" designation is to protect the nesting shorelines and potential habitat of listed birds from wave action generated by boats. Once the birds are nesting, CPW will restrict access to the area.

	<p>4.2.7 Fish and Wildlife Sanctuary: Please provide further information about the 2,055 surface acres of closure area for “Fish and Wildlife Sanctuary.” CPW would prefer to see some language in there regarding the ability to change size as necessary during years of extreme drought, presence or lack of waterfowl, and/or high water/low water conditions.</p>	<p>Concur - CPW has the responsibility of setting the boundary for the sanctuary. The 2,055 surface acres is set at the conservation pool and is expected to change with the water level. USACE will clarify this in the Plan.</p>
	<p>5.1 OMP: access to outside agency personnel - This section mentions an annually updated OMP which contains more descriptive and detailed information for managing project lands. Is this a document that CPW can have access to in order to gain understanding of the classification and management strategies?</p>	<p>Though the OMP is an internal USACE document, USACE will coordinate the OMP with CPW's Annual Management Plan.</p>
	<p>5.2 Project Operations: At the end of 5.1 Management by Classification and 4.2.1, there is mention of boundaries extending to the water's edge and thus the management of the areas is subject to expansion based on pool level. How does this extension occur with regard to Project Operation land and the adjacent High Density Rec and Wildlife Management lands? Is there a defined area of Project Operations or does that area continue to extend beyond the foot print of the dam and associated rip-rap?</p>	<p>The only fixed land classification boundary is HDR, which is part of a lease. All other land classifications, including Project Operations, extends from the USACE fee boundary to the water surface. As the water recedes, the land classification expands. However all land classification measurements in the Master Plan are based on the conservation pool.</p>

	<p>5.5 ESA: "These areas must be managed to ensure they are not adversely impacted. Typically, limited or no development of public use is allowed on these lands." -- CPW would like to further understand the meaning of this statement. Would improvement of a trail or trailhead be excluded development in these areas? What is defined as "development of public use"?</p>	<p>Typically these areas are managed on a case-by case basis, depending on the resource being protected. It is typical for natural surface trails to be incorporated, but trailhead development would depend on the extent of the facility and the resource being protected.</p>
	<p>5.7 Water Surface: The first paragraph in this section contains some incorrect information. The surface of the water was added as part of the recreation lease with CPW. As part of that management CPW manages the buoy placement, moving and removal as well as boating safety and law enforcement on the water. The USACE places and/or coordinates the restricted area in front of the dam.</p>	<p>Concur - amended</p>
	<p>5.7: Should a separate classification be added to this section dealing with the seasonal closures of T&amp;E species habitat areas (i.e. seasonally restricted)?</p>	<p>USACE has only one classification for Restricted water, but will clarify the seasonal closure in the text.</p>
	<p>5.7.1 Restricted: This provides a better description of the area's restricted (reference comments under section 4.2.7 "restricted" above). It is understood that these are "no boating" zones. As a clarification, there is only one swim beach at Lake Hasty when this paragraph suggests the plural of "swim beaches".</p>	<p>Will clarify in draft.</p>
	<p>5.7.2 Designated No-Wake: CPW would like to mention an area which constitutes a narrow channel at the railroad trestle when the water level is high enough for that area to be boatable. This is an additional area that CPW has designated "No Wake" to protect people and property. This no wake zone is noted on the maps, but not listed in this section.</p>	<p>Concur - listed in section</p>

	<p>5.7.3 Fish and Wildlife Sanctuary: Same comment carry over from above (4.2.7 Fish and Wildlife Sanctuary); please add language which would allow the size of the 2,055 surface acres of closure to be sized appropriately with due regard to the waterfowl resting season, during years of extraordinary circumstance.</p>	<p>Concur - amended to clarify</p>
	<p>5.7.3: Another aspect for consideration regarding this section is: if we can add programs to better serve our public in the future we would like the ability to have the decision authority as to when facilities are available. One idea has been brought up in multiple customer and staff conversations is that adding wildlife viewing blinds, which could double as hunting blinds, in a few key areas would increase use from the public in multiple user group capacity. With closure on most of the state park shoreline and the accessible water on the main reservoir, the 2,055 surface acres does not make much sense when considering all factors. It firmly limits our ability to expand recreational opportunities during the winter season when the potential to make meaningful changes is possible.</p>	<p>USACE is eager to partner with agencies to improve recreational facilities and activities at John Martin Reservoir. CPW is responsible for managing the Fish and Wildlife sanctuary, and acres are understood to vary from year to year based on pool fluctuation. While no permanent facilities can be placed within the conservation pool area, temporary structures would be acceptable.</p>
	<p>6.1 T &amp;E Species and Low Water Conditions: "No-Wake Areas" have been designated around the islands where birds tend to nest near the north shore. -- This is referencing the "No Access/Closure" Areas that surround an enclosure when there are birds engaged in nesting behavior. This closure is currently more restrictive than a "no wake area" where boats are allowed to occupy the area and not create a wake. Is it the direction of the USACE to reduce the current standard?</p>	<p>The intent of the "No-Wake" designation is to protect the nesting shorelines and potential habitat of listed birds from wave action generated by boats. Once the birds are nesting, CPW will restrict access to the area.</p>

	<p>6.1: We would like further information regarding when seasonal restrictions are added to the islands off the North shore for bird habitat and whether or not birds are present in these areas. Is it also required to buoy the 25% kernel density areas? This is a large area and will require more buoys and staff time to erect. Should this buoy section be added to a new seasonal closure category as previously mentioned above? It does not appear to be captured in the potential water surface classifications.</p>	<p>The islands would fall under the same rules as the south shore in terms of closure and no-wake areas. The no-wake area would protect the habitat from inundation and erosion, and the closures would be in place while the listed birds are nesting.</p>
	<p>6.3 Access and Private Property: Please be sure to include all forms of public access in this section. Vehicular traffic as well as foot traffic access is desired to allow public full use of the mentioned area. Another potential issue that has been addressed and will continue to be addressed is the unlawful launching or loading of vessels from the private property. This is a concern when considering the avoidance of the Aquatic Nuisance Species Inspections occurring on the park. This is only an issue at higher water levels but has required some attention in the last few years.</p>	<p>USACE works with CPW and private land owners to help provide access and manage areas within and adjacent to USACE lands. However, USACE has no jurisdiction on private property. Watercraft can be launched from private lands without inspection, but once a craft enters public water CPW and USACE have jurisdiction to enforce laws.</p>
	<p>6.4: This might be a place to make mention of the USACE owned water rights associated with sharecrop agreements. We cannot find any mention of CORP owned water rights within this document.</p>	<p>Concur - amended</p>
	<p>6.5: "Nearly all fishing activity at JMR occurs at Lake Hasty" -- This is a false and misleading statement. While a fair amount of fishing hours are contributed to Lake Hasty, the main body of John Martin Reservoir receives far more fishing hours. Please remove.</p>	<p>Concur - amended</p>



	6.6: Please remove the mention of the Fort Lyon State Wildlife Area. This section does not specifically talk about anything dealing with the SWA, nor is the SWA influenced by this management plan. The map is the only reference to the SWA, and thus the inclusion is erroneous.	Concur - removed
	Table 8.3 Reclassification Proposals, Environmentally Sensitive Areas (ESA):	
	* Considering the 50 acres that were converted to ESA from HDR- how restricted are these areas intended to be? This concern also spans the additional 45 acres from LDR and 132 acres from WM. Excluding people from a site that should be respected, regarded, and interpreted to the public is not the typical path of CPW. When it comes to sensitive habitat this is understandable, but a valuable cultural resource should be managed with care not necessarily removed from public access. We would hope to understand the direction that is preferred from this change.	Acres converted to ESA from HDR is done so to protect the listed birds. This is done to reflect the current and desired management of these lands, as is stated in the CPW management plan. Acres converted from LDR and WM fall under the same rules. Some ESA's are put in place to protect cultural sites. The ESA designation limits or restricts access or development that will harm the resource being protected. USACE and CPW will work together toward this end.
	* Can you provide a pair of maps to aid in understanding where the land classifications changed from previous class to current class? We do not feel there is enough information to understand all of the changes.	USACE only presents the final map. Chapter 8 of the master plan provides details of the land classification changes. For additional information on the impact of changes, please refer to the EA.

	<p>* Can you provide an estimated acreage of the South shore ESA at low water? CPW is concerned about access beyond this ESA.</p>	<p>There are no official acres for low water, as they vary with the water surface. Acres are only calculated at conservation pool. Because of the nature of the area, the map and land classes were provided for illustration only to show the protected nesting sites at low water. If there are no listed birds nesting, access is allowed in this area. Activities are limited to those that will not degrade the habitat or interfere with the birds.</p>
	<p>Map #JM17MP-OC-05: Are ESA#3's planned to be a permanent buoy and closure occupied by birds or not? That appears to be the indication of the map and CPW needs to better understand the intention here.</p>	<p>As stated previously, management of these areas, no-wake or closure, would depend on the nesting birds. The same rules would apply here as on the south shore. It is intended to continuously protect the habitat and seasonally the nesting birds.</p>
	<p>Map #JM17MP-OC-06: If above comments regarding the Fish and Wildlife Sanctuary Closure are accepted this is the correlating map.</p>	<p>As stated previously, CPW sets the boundary for the Fish and Wildlife Sanctuary. The map shows the seasonal closure at conservation pool.</p>

	Map #JM17MP-OC-07: ESA #4 Reoccurring question regarding what the expectation is. This is a widely known resource to the public, and has served as an area of importance in this portion of the state for a few centuries. Providing a plan of management for this and other areas would certainly be helpful.	Added addition text for management in Section 5.5. The area is currently open to public vehicular traffic with no restriction and vandalism is occurring.
	Map #JM17MP-OC-0A: Suggested edits to create a more accurate map of current facilities. Items on map which require updating. The Wind warning light (wrong location and no longer functional), Sandstone Recreation Area (no longer referred to by that name), trail location is inaccurate when routing near the stilling basin.	This was a CPW map. CPW has provided an up-to-date map and USACE has include it in the map section.
	EA Page 10, Designated No-Wake: It is understandable to reduce impact on public safety and private property as well as public property to designate No-Wake areas. We would like to add the restricted channel under the train trestle and the area around the Lane 19 Boat Ramp to the list which changes 2 acres to this classification. The current procedure is more restrictive when it comes to ESA management. We have been designating those areas as "No Access" areas, effectively making them Restricted Areas. This reduces public interaction with the populations of nesting birds. If it is the desire of the USACE we can reduce our standard to match this level of management but do not feel it is in the best interest of the birds.	Will list them in this section, as well as note the changed to "Restricted" during active nesting.
	EA Page 10-11, Fish and Wildlife Sanctuary: Please refer to the numerous comments above that indicate more flexibility is needed to provide appropriate management in differing conditions.	As previously noted, CPW sets the Fish and Wildlife Sanctuary boundaries and therefore has the flexibility needed.
	EA Page 13, Lake Hasty Campground: "In winter, 51 of the hookup sites remain open." --It would be best to say that, "In winter, a portion of the electrical sites in Lake Hasty close due to overnight roosting bald eagles in the treed areas. The remaining sites are open for use year round."	Concur - amended

	EA Page 13, Lake Hasty Campground: Remove "two boats ramps" they are not associated with Lake Hasty.	Concur - removed
	EA Page 13, Point Campground: "located on the north shore of John Martin Reservoir, offers primitive camping." --This may be semantics between our agencies; Primitive or dispersed camping would be the type of camping that has been allowed on the Wildlife Areas. Basic camping is what is offered at the Point. "The campground is open year around." A portion of the campground remains open during the winter season. The number of sites are reduced.	Concur - amended
	EA Page 22: Crappie should be Pomoxis nigromaculatus (black crappie) not Pomoxis annularis (white crappie). Please remove tiger musky and white sucker; add saugeye(Sander vitreus X Sander canadensis); add wiper (Morone saxatilis X Morone chrysops); add flathead catfish (Pylodictis olivaris); and add gizzard shad (Dorosoma cepedianum).	Changed

	<p>EA Page 24, Section 3.7.2 Proposed Action: Moving to the designation ESA in this paragraph speaks of changes to boating access and potential changes to vehicular access around nesting sites. Both processes are already in place and have been implemented by CPW. It is unclear how the current methods will be changed. Please elaborate so that all may understand the plans direction.</p>	<p>Clarified Section 3.7.2... The purpose of the Master Plan and associated EA is not to identify or determine specific management actions. Rather, it acknowledges that USACE, FWS, and CPW will continue to work together to ensure recreation activities and natural resources are managed appropriately based on the land classification. Specific recreation limitations, if needed, and conservation measures would be developed through further coordination between CPW, USFWS, and USACE based on the resources present, recreation opportunities, and land classification purposes.</p>
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	EA Section 3.8: Colorado Parks and Wildlife (CPW) feels that the identified Environmentally Sensitive Areas (ESA) for Least Tern and Piping Plover accurately reflect the most important nesting areas at John Martin Reservoir. However, CPW still has concerns with the South shore ESA in regard to size and ability of public to navigate around that potential closure area.	ESA management is determined outside the master plan and is based on the Biological Opinion. The ESA was established due to the 25% kernel density, while management of this area is based on presence of nesting birds.
	EA Page 26, Section 3.9: Remove Spiny Water Flea from this list. It is not the correct water flea detected at John Martin Reservoir. The Daphnia lumholtzi is no longer a listed State Species as of 2017, this species was detected in John Martin Reservoir as well as 15 other reservoirs in the state. Spiny Water Flea (Bythotrephes longimanus) has not been detected at John Martin Reservoir.	Concur - removed
	EA Page 27, Section 3.9: Remove paragraph pertaining to Spiny Waterfleas also	Concur - removed
	EA Page 33, Section 3.12 Recreation: Add "Point" in the Picnicking section. The area is named "Point Overlook", not "Overlook".	Concur - amended
	EA Page 40, Section 4.2: CPW is actively evaluating and considering whether or not current facilities are sufficient for the ever changing recreational uses at John Martin Reservoir. We cannot rule out the need for future development to meet the needs of the public and the needs of the property and resource impacts.	Concur - amended
	EA Page 42, Section 4.3.9: Change John Martin Reservoir to USACE	Concur - amended



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## **CHAPTER 8 - SUMMARY OF RECOMMENDATIONS**

### **8.1 SUMMARY OVERVIEW**

The preparation of the John Martin Reservoir Master Plan followed the USACE master planning guidance in ER 1130-2-550 and EP 1130-2-550, both dated 13 January 2013. Three major requirements set forth in the guidance include (1) the preparation of contemporary resource objectives, (2) classification of project lands using the new classification standards, and (3) the preparation of a resource plan describing in broad terms how the land in each of the land classifications will be managed over the 25-year planning horizon. Additional important requirements include rigorous public involvement throughout the process, and consideration of regional recreation and natural resource management priorities identified by other federal, state, and municipal authorities. The study team endeavored to follow this guidance to prepare a master plan that will provide for enhanced recreational opportunities for the public, improve environmental quality, and foster a management philosophy conducive to existing and projected staff levels at John Martin Reservoir. Factors considered in the Plan resulted from public involvement and review of statewide planning documents including CPW's 2014 SCORP. The Master Plan will ensure the long-term sustainability of the USACE managed recreation program and natural resources associated with John Martin Reservoir.

### **8.2 LAND CLASSIFICATION PROPOSALS**

A key component in preparing the Master Plan was examining prior land classifications and addressing the needed transition to the new land classification standards. During the public involvement process, USACE sought public input into whether, besides the simple change in nomenclature, a shift in land classification was desired (for example, should lands with a recreation classification be reclassified to a wildlife classification or vice versa). Chapter 7 of the Plan describes the public input process.

USACE received one public comment following the public scoping meeting. This comment was from CPW, whom USACE worked closely throughout the process. The land classifications presented in the Plan were formulated through a combination of the CPW input, John Martin Reservoir project staff, USACE Albuquerque District (SPA) Operations Division staff, and the Regional Planning and Environmental Center (RPEC) staff assigned to the Master Plan Project Delivery Team (PDT), and were based on first-hand experience, professional training, and best management practices.

Upon review of the 1974 version of the Master Plan, it was determined that not all the acres were accurately captured on the 1974 map plates. A recalculated version of the 1974 land classification map was developed using GIS to fix errors and omissions. The recalculated land classification acres are used as the basis of comparison for the new land classifications presented in this MP revision. Table 8.1 reflects the measurement

adjustments from the 1974 Master Plan land classification acres to the new measurements of those classifications. The revised 1974 acres are used as the basis for the 2017 beginning acres for land reclassifications, which are then compared to the new land reclassification found in Table 8.2.

**Table 8.1 Land Classification Adjustments from 1974 to 2017**

Land Classification	1974 Acres	1974 Recalculated Acres	Difference
Project Operations	441	438	3
Operations: Recreation-Intensive Use	682	680	2
Secondary Allocation to Low Density Recreation	1,221	1,213	8
Operations: Wildlife Management**	8,056	8,246	-190
<b>Total Land</b>	<b>10,400</b>	<b>10,577</b>	<b>177</b>
Water Surface	11,267	11,120	-147

\*Due to improvements in area measurement technology, erosion and sedimentation John Martin Reservoir increased 177 acres of land and lost 147 surface acres of water from the 1974 Master Plan to the Revised 1974 Master Plan measure.

\*\* The original 1974 Master Plan included the conservation pool water surface acres as part of the Operations: Wildlife Management Classification. The conservation pool has been separated out from the land classification to accurately reflect actual acres.

Table 8.2 provides a summary of acreage changes from prior land classifications to the current classifications. Table 8.3 presents key decision points in the reclassification of project lands at John Martin Reservoir.

**Table 8.2 Change from Prior Land Classification to New Land Classification**

Prior (1974) Recalculated Land Classifications	Acres	New Land Classifications	Acres	Change
Project Operations	438	Project Operations (PO)	514	76
Operations: Recreation – Intense Use	680	High Density Recreation (HDR)	1,307	627
		Environmentally Sensitive Areas (ESA)	227	227
Secondary Allocation to Low Density Recreation	1,213	Multiple Resource Management – Low Density Recreation (MRL_LDR)	0	-1,213
Operations: Wildlife Management	8,246	Multiple Resource Management – Wildlife Management (MRL-WM)	8,602	356
Permanent pool	11,120		11,484	364

\*Note: The new land classification acreage figures were measured using GIS technology and may vary slightly from official land acquisition records. Flowage easement lands are 4,976 acres.

**Table 8.3 Reclassification Proposals**

Land Category	Description	Justification
<b>Project Operations (PO)</b>	<p>Lands under the PO classification changed from 438 acres to 514 acres as a result of the reclassifying the strip of PO including the dam and extending north as follows:</p> <ul style="list-style-type: none"> <li>• 1 acre from HDR</li> <li>• 19 acres from Water Surface</li> <li>• 56 acres from HDR for the north dam wing</li> </ul>	<p>All lands reclassified to Project Operations have historically been used in support of critical operational requirements related to the primary missions of flood risk management and water conservation. The reclassification or conversion of the additional 76 acres to Project Operations will have no effect on current or projected public use.</p>
<b>High Density Recreation (HDR)</b>	<p>The 680 acres under the prior classification of Operations – Intense Use were renamed to the new and similar classification of HDR.</p> <p>The increase from 680 acres to 1,307 acres were the result of the following reclassifications:</p> <ul style="list-style-type: none"> <li>• 809 acres from LDR to HDR above the conservation pool within the current State Park Lease.</li> <li>• 3 acres to WM</li> <li>• 50 acres to ESA</li> <li>• 1 acre to PO</li> <li>• 72 acres to Water Surface</li> <li>• 56 acres from PO for the north wing of the dam</li> </ul>	<p>The acres reclassified from LDR to HDR reflect the current and future use of those lands.</p> <p>Acres of HDR were reclassified as Environmentally Sensitive Areas to protect cultural or habitat sites.</p> <p>The acres converted to the water surface were a result of correcting previously misclassified acres, more accurate measurement systems and lands created as a result of siltation around the reservoir, Lake Hasty, the stilling basin, and the River.</p> <p>The reclassification and conversion of these lands will have no effect on current or projected public use.</p>

Land Category	Description	Justification
<b>Environmentally Sensitive Areas (ESA)</b>	<p>The reclassification of 227 acres as ESA resulted from converting Areas to ESA as follows:</p> <ul style="list-style-type: none"> <li>• 50 acres from HDR</li> <li>• 45 acres from LDR</li> <li>• 132 acres from WM</li> </ul>	<p>This classification change was necessary to recognize those areas at the project having the highest ecological value including areas of high value for (1) protection of important habitat for the endangered Interior Least Tern and threatened Piping Plover as designated by the USFWS, and (2) to protect unique views, and cultural and archeological sites.</p> <p>The reclassification of lands will require a change in management for these areas and may have an effect on current or projected public use. Lands classified as ESA are given the highest order of protection among possible land classifications.</p> <p>*Note: as the water level falls below the conservation pool, the exposed shoreline on the south side of the reservoir becomes an ESA for the protection of the nesting threatened and endangered birds.</p>
<b>MRML – Low Density Recreation (LDR)</b>	<p>The previous area designated as <i>Secondary Allocation to Low Density Recreation</i> was converted to HDR above the conservation pool. The 1,213 LDR acres were reclassified as follows:</p> <ul style="list-style-type: none"> <li>• 809 acres HDR</li> </ul>	<p>The 45 acres were reclassified as ESA to protect cultural or important habitat sites.</p> <p>The acres converted to water surface were a result of correcting</p>

Land Category	Description	Justification
	<ul style="list-style-type: none"> <li>• 45 acres to ESA</li> <li>• 359 acres to Water Surface</li> </ul>	<p>previously misclassified areas, more accurate measurement systems and land changes from erosion and siltation of the reservoir.</p> <p>The reclassification of these lands will have no effect on current or projected public use.</p>
<b>MRML-Wildlife Management (WM)</b>	<p>WM changed from 8,246 to 8,602 as a result of reclassifying the following:</p> <ul style="list-style-type: none"> <li>• 132 to ESA</li> <li>• 3 acres from HDR</li> <li>• 3 acres to Project Operations</li> <li>• 117 acres from Water Surface</li> <li>• 371 acres from sedimentation and improvements to measurement system</li> </ul>	<p>Lands reclassified as ESA were better suited for a higher level of protection. The remaining acres changed were a result of siltation, improvements in measurement technology, and correction of previously misclassified acres. The reclassification of these lands will have no effect on current or projected public use.</p>
<b>MRML – Vegetative Management (VM)</b>	There were no acres converted to Vegetative Management	
<b>MRML – Future and Inactive Recreation</b>	There were no acres designated as Future and Inactive Recreation	
<b>Water Surface</b>	<p>The classification of water surface resulted in the following:</p> <ul style="list-style-type: none"> <li>• No Wake – 180 acres to protect critical habitat and boat docks</li> <li>• Restricted – 30 acres around dam infrastructure and swim beaches</li> </ul>	<p>Water surface classification reflect best management practices of areas on the reservoir. The reclassification and additional lands will have no effect on current or projected public use.</p>



Land Category	Description	Justification
	<ul style="list-style-type: none"> <li>• Fish and Wildlife Sanctuary - 2,055 acres as seasonal bird resting area</li> <li>• Open Recreation – 9,090 acres free from the above restrictions</li> <li>• 235 acres were added to the total water surface as a result of improvements in area measurement technology, areas added that were previously left off, and changes in land acres due to sedimentation and erosion</li> </ul>	

## CHAPTER 9 - BIBLIOGRAPHY

Arkansas River Compact Administration, 1980, p. 40

Colorado Foundation for Water Education. Winter 2008. Headwaters. Focus on Wildlife: Dwindling Refuges, Bonny and John Marin

Colorado Parks and Wildlife (CPW). 2014. Statewide Comprehensive Outdoor Recreation Plan. [https://cpw.state.co.us/Documents/Commission/2014/Mar/24-PowerPoint-2014\\_SCORP-March2014PWCMtg.pdf](https://cpw.state.co.us/Documents/Commission/2014/Mar/24-PowerPoint-2014_SCORP-March2014PWCMtg.pdf)

CPW. 2015. State Wildlife Action Plan. [Cpw.state.co.us](http://cpw.state.co.us)

CPW. 2015. John Martin Reservoir State Park Bird Checklist

CPW. 2016. Comments on draft EIS  
[https://www.usbr.gov/avceis/comments/22\\_dan\\_prenzlowlow.pdf](https://www.usbr.gov/avceis/comments/22_dan_prenzlowlow.pdf)

CPW. 2015. State Wildlife Action Plan. Species of Greatest Conservation Need.  
[https://cpw.state.co.us/Documents/WildlifeSpecies/SWAP/CO\\_SWAP\\_Chapter2.pdf](https://cpw.state.co.us/Documents/WildlifeSpecies/SWAP/CO_SWAP_Chapter2.pdf)

Colorado State University. 2017. Colorado Natural Heritage Program. Wetland Profile for Upper Arkansas-John Martin Reservoir Sub-basin  
<http://www.cnhp.colostate.edu/wetlandinventory/profile.asp?GeoUnitID=50>

Defense Technical Information Center. 1982. A Cultural Resources Inventory of the John Martin Reservoir, Colorado. <http://www.dtic.mil/docs/citations/ADA147028>

National Climatic Data Center (NOAA). Accessed 2017 <https://www.ncdc.noaa.gov/cdo-web/>

U.S. Bureau of the Census. 2015. American Fact Finder Website

U.S. Army Corps of Engineering (USACE). 2013. ER 1130-2-550, Project Operations, Recreation Operations and Maintenance Guidance and Procedures. HQ, USACE

USACE. 1974. John Martin Reservoir Project, Bent County, Colorado, Updated Master Plan, Design Memorandum No. 1 Albuquerque District

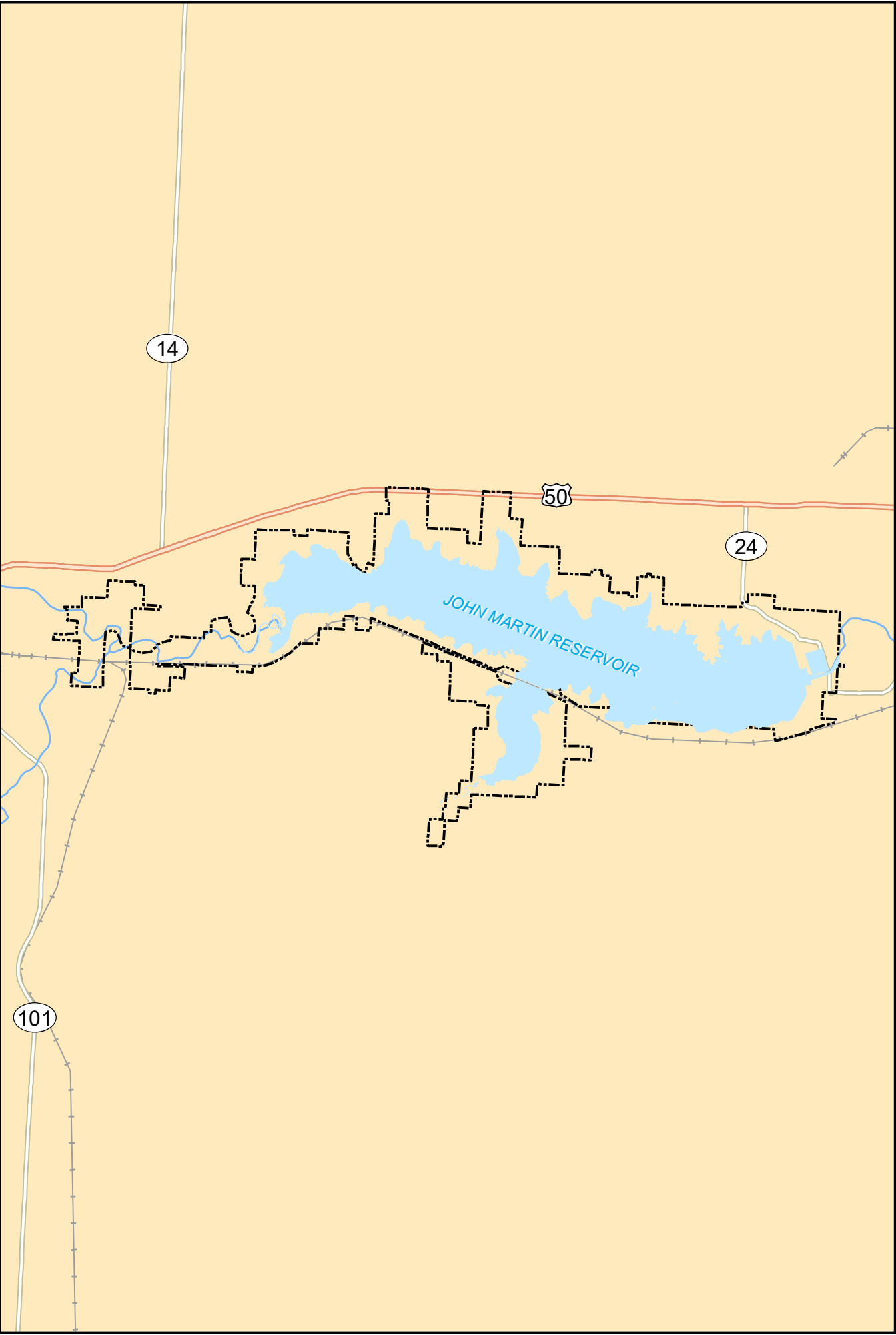
USACE. 2013. EP 1130-2-550, Project Operations, Recreation Operations and Maintenance Guidance and Procedures. HQ, USACE

USACE. 2015. OMBIL Environmental Stewardship Module. USACE, Albuquerque District, New Mexico

- USACE. 2015. OMBIL Recreation Module. USACE, Albuquerque District, New Mexico
- USACE. 2015. Summary Description of Hicklin Springs Petroglyph Site (5BN007). Gregory D. Everhart. Albuquerque District
- USACE. 2015. Agreement on Implementation of John Martin Reservoir Revised Elevation-Area-Capacity Table in the H-I Model – Colorado State Engineer, Kansas Chief Engineer  
(<https://www.supremecourt.gov/SpecMastRpt/2015%20Agreement%20on%20Implementation%20of%20John%20Martin%20Reservoir.pdf>)
- USACE. 2002. Endangered Species Management Plan for Piping Plovers and Interior Least Terns for John Martin Reservoir
- USACE. 2001. Finding of No Significant Impact and Final Environmental Assessment. Lease Agreement to Colorado State Parks
- USACE. 2018. Value to Our Nation. <http://www.corpsresults.us/> retrieved April 2018
- United States Department of Interior. 2001. Fish and Wildlife Services Biological Opinion for Interior Least Tern and Piping Plover at John Martin Reservoir
- United States Geological Survey (USGS). Geologic Map of the Bailey 30' x 60' Quadrangle, North-Central Colorado. <https://www.usgs.gov/>
- U.S. Fish and Wildlife Service (USFWS). 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior. December 1979; reprinted 1992
- USFWS. 2017. Interior Lease Tern Fact Sheet  
<https://www.fws.gov/midwest/endangered/birds/leasttern/IntLeastTernFactSheet.html>
- USFWS. 2017. IPaC Trust Resource Report, John Martin Reservoir
- United States National Vegetation Classification. Accessed 2017 at <http://usnvc.org/>

## **APPENDIX A - LAND CLASSIFICATION, MANAGING AGENCIES, AND RECREATION MAPS**

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**INDEX TO MASTER PLAN MAPS**

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JM17MP-OI-00 JM17MP-OM-01	PROJECT LOCATION & INDEX TO MAPS AGENCY LAND MANAGEMENT

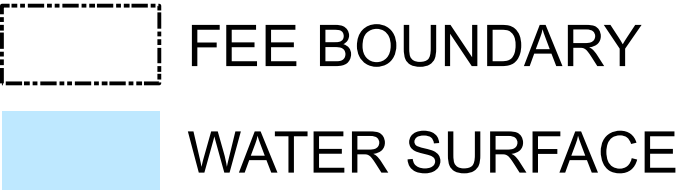
**LAND CLASSIFICATION**


<b>MAP NO.</b>	<b>TITLE</b>
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JM17MP-OC-02	LAND AND WATER CLASSIFICATIONS (02)
JM17MP-OC-03	LAND AND WATER CLASSIFICATIONS (03)
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JM17MP-OC-05	LAND AND WATER CLASSIFICATIONS (05)
JM17MP-OC-06	LAND AND WATER CLASSIFICATIONS (06)
JM17MP-OC-07	LAND AND WATER CLASSIFICATIONS (07)
JM17MP-OC-08	LAND AND WATER CLASSIFICATIONS (08)
JM17MP-OC-09	LAND AND WATER CLASSIFICATIONS (09)

**RECREATIONAL AREAS**

<b>MAP NO.</b>	<b>TITLE</b>
JM17MP-OP-0A	RECREATIONAL AREAS

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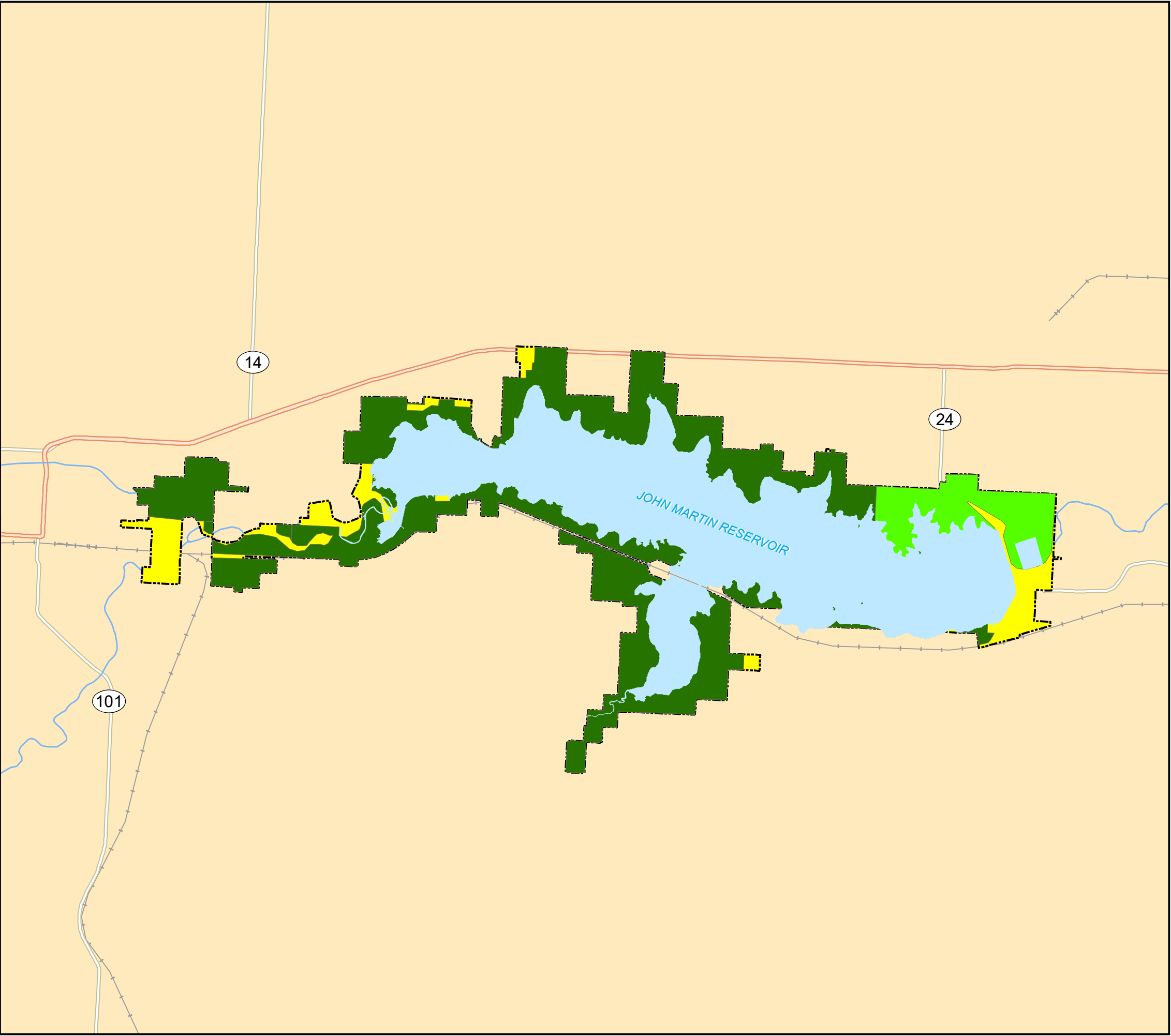
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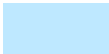






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-  WATER SURFACE
-  CO STATE PARKS LEASE
-  CO STATE WILDLIFE LICENSE
-  USACE MANAGED LAND



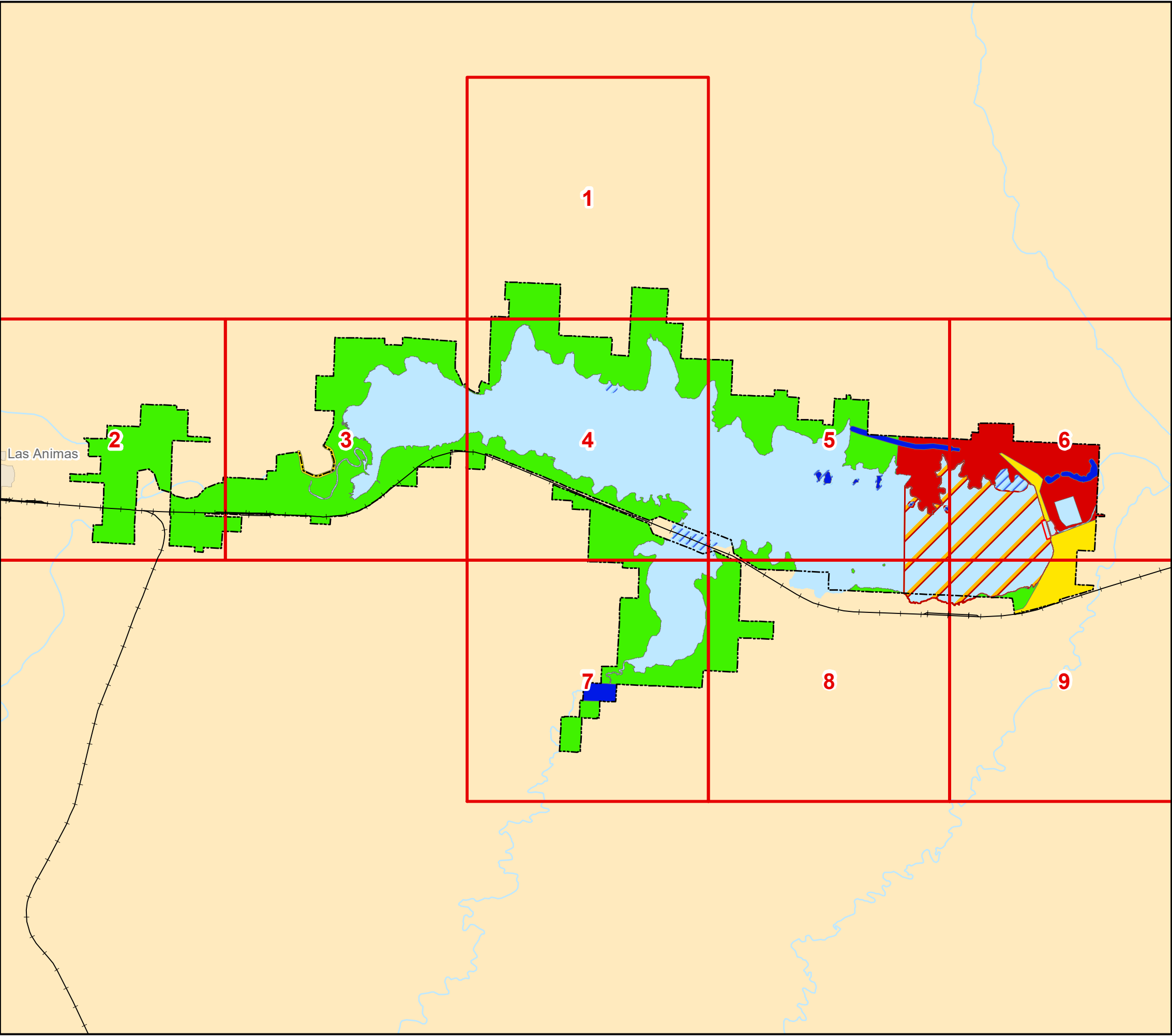
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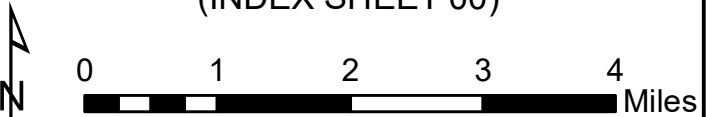
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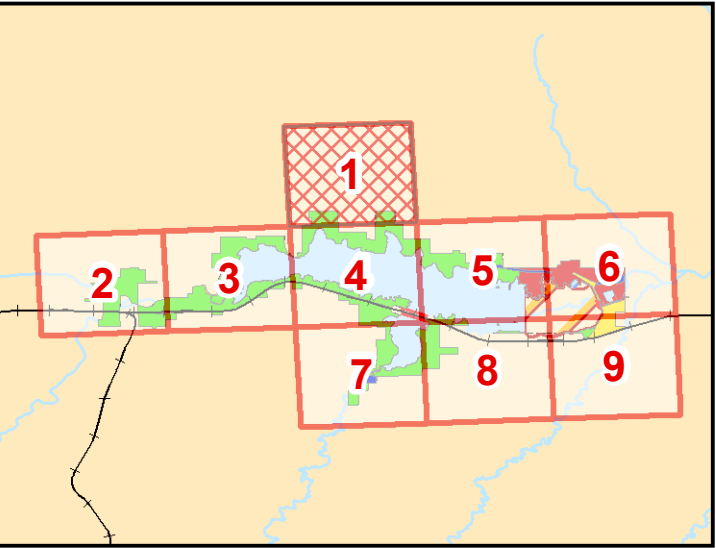
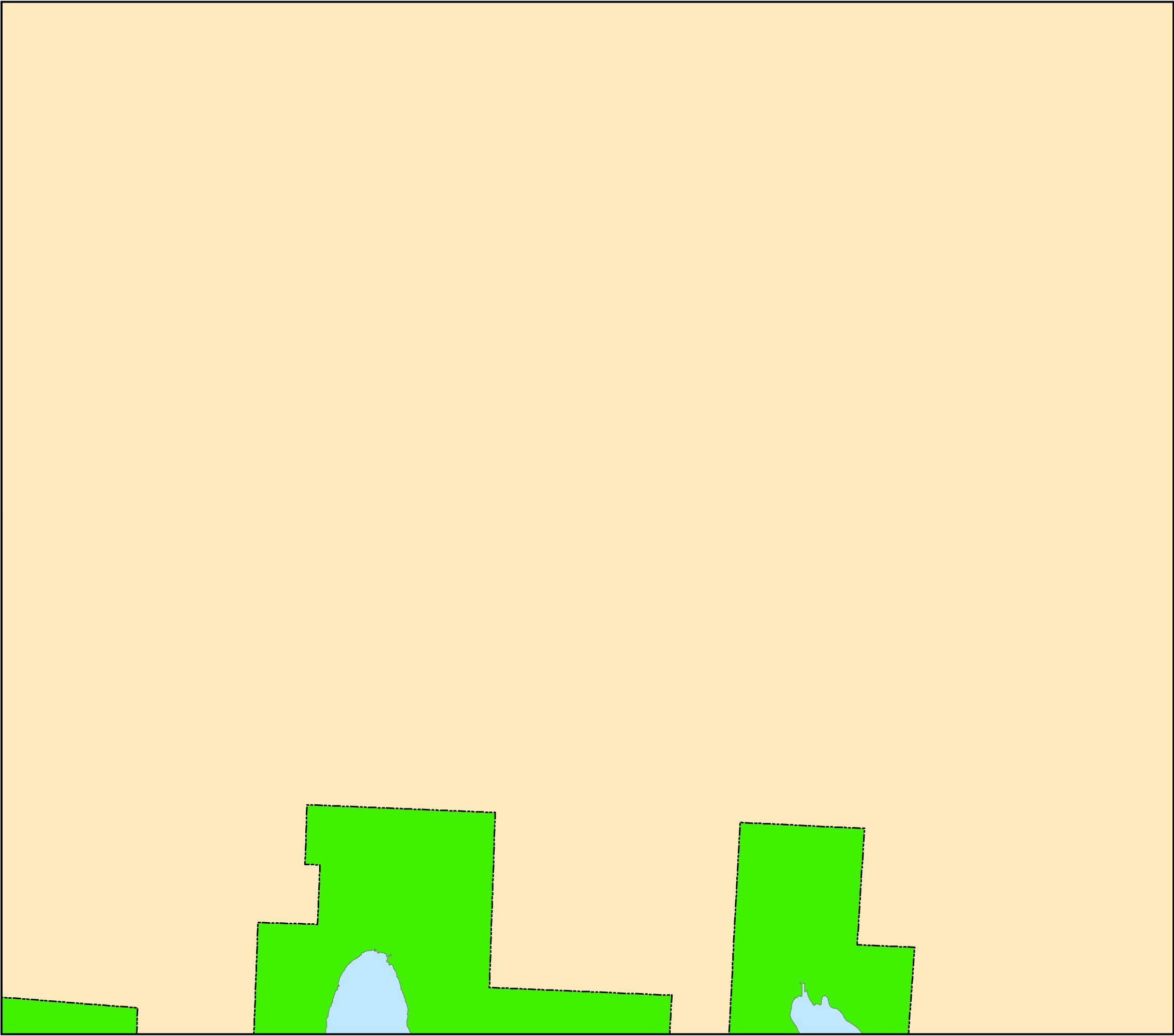
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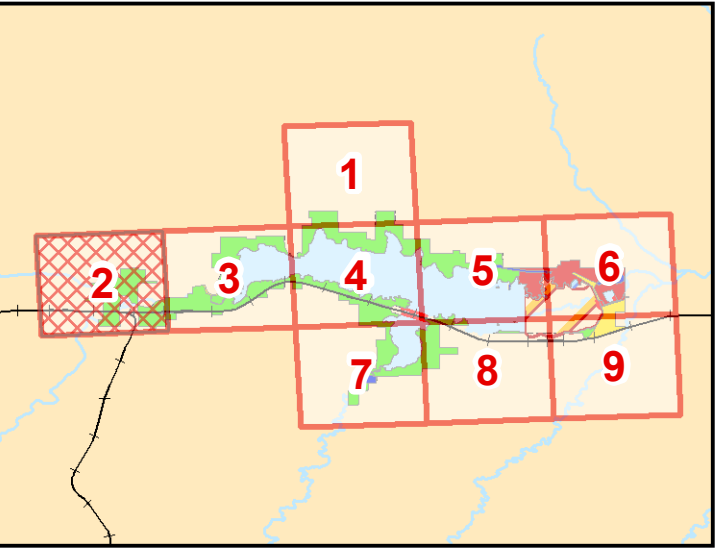
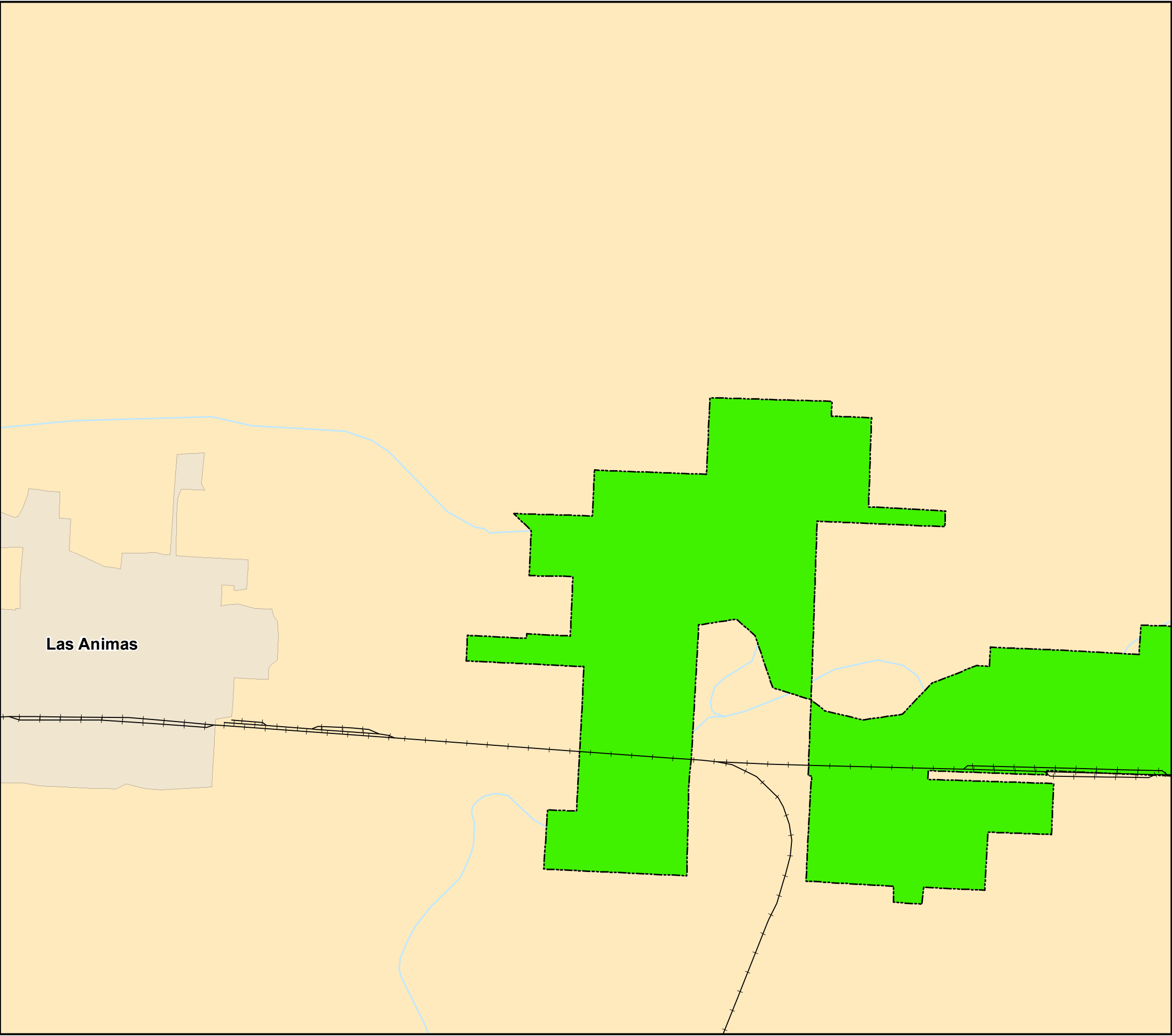
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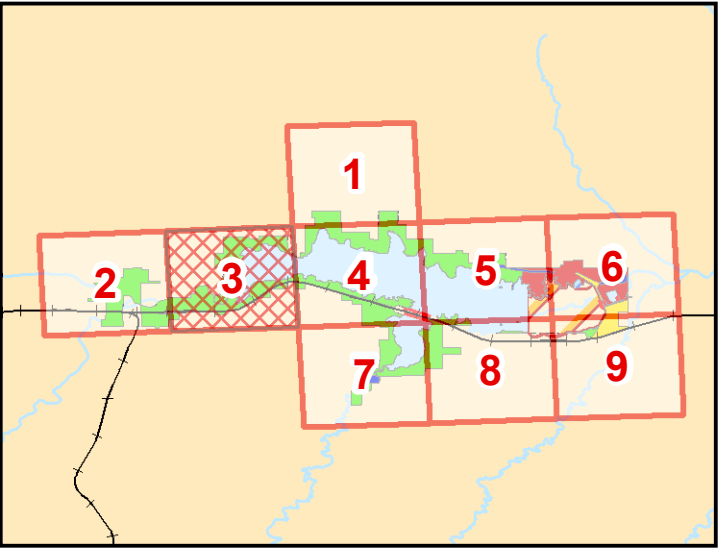
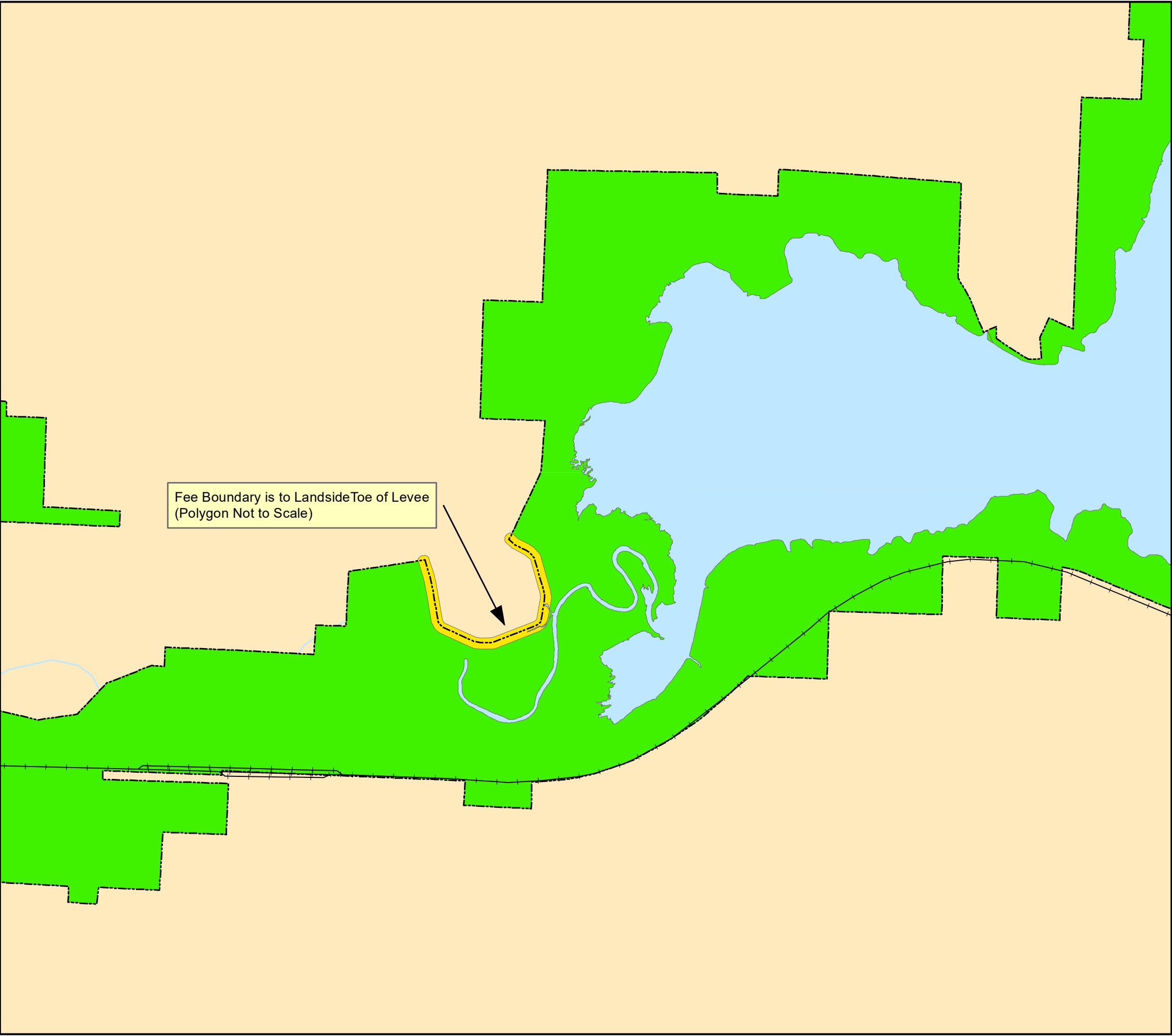
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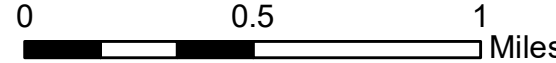

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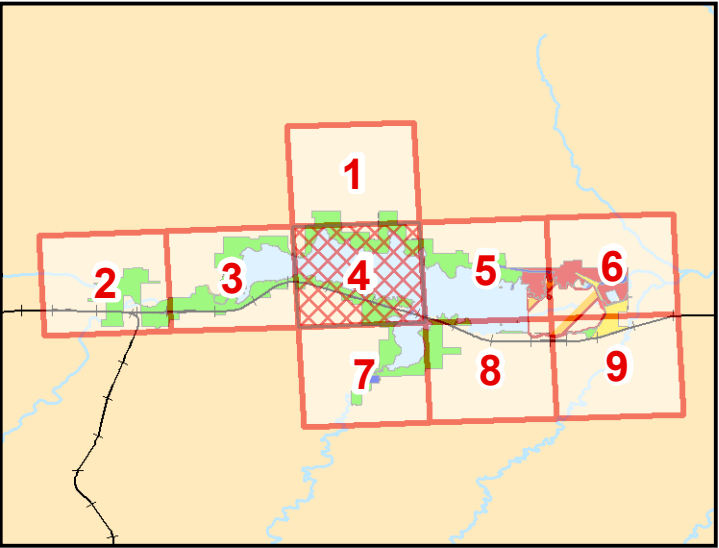
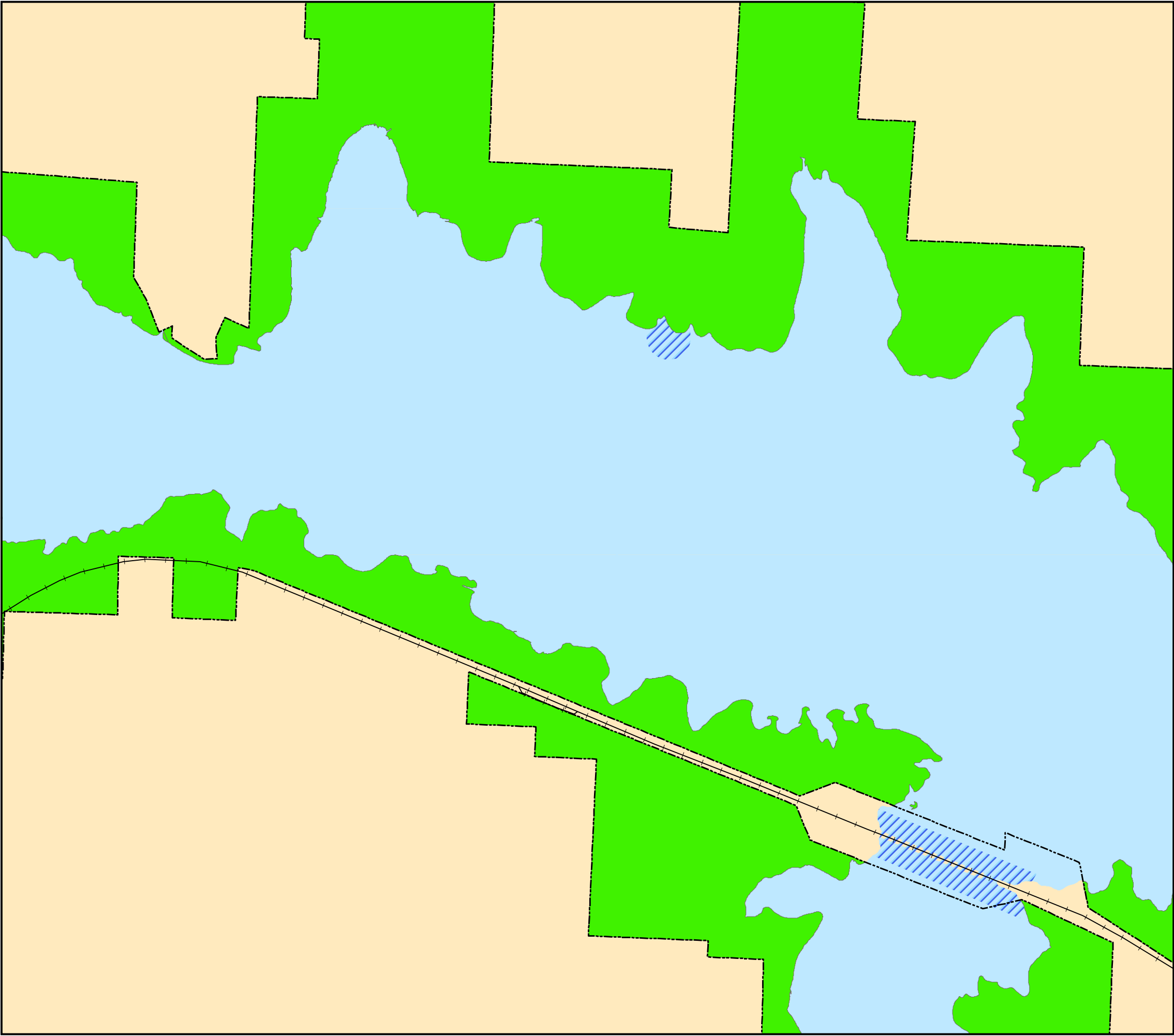
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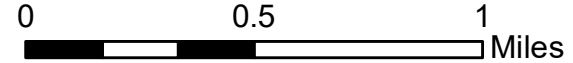

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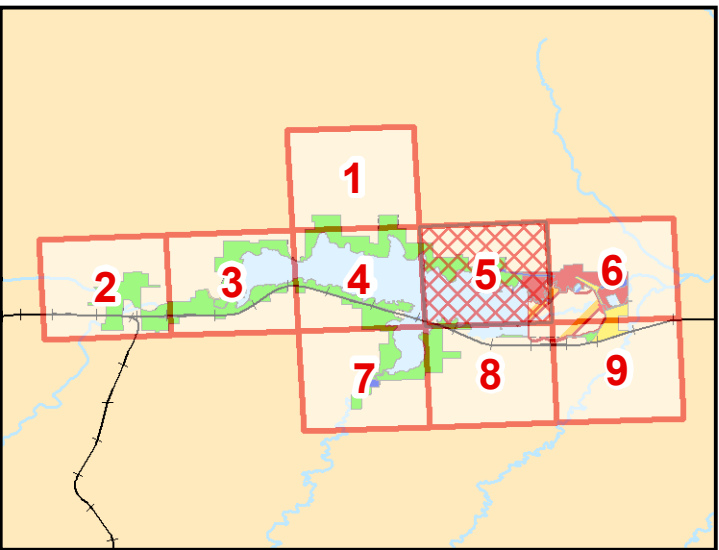
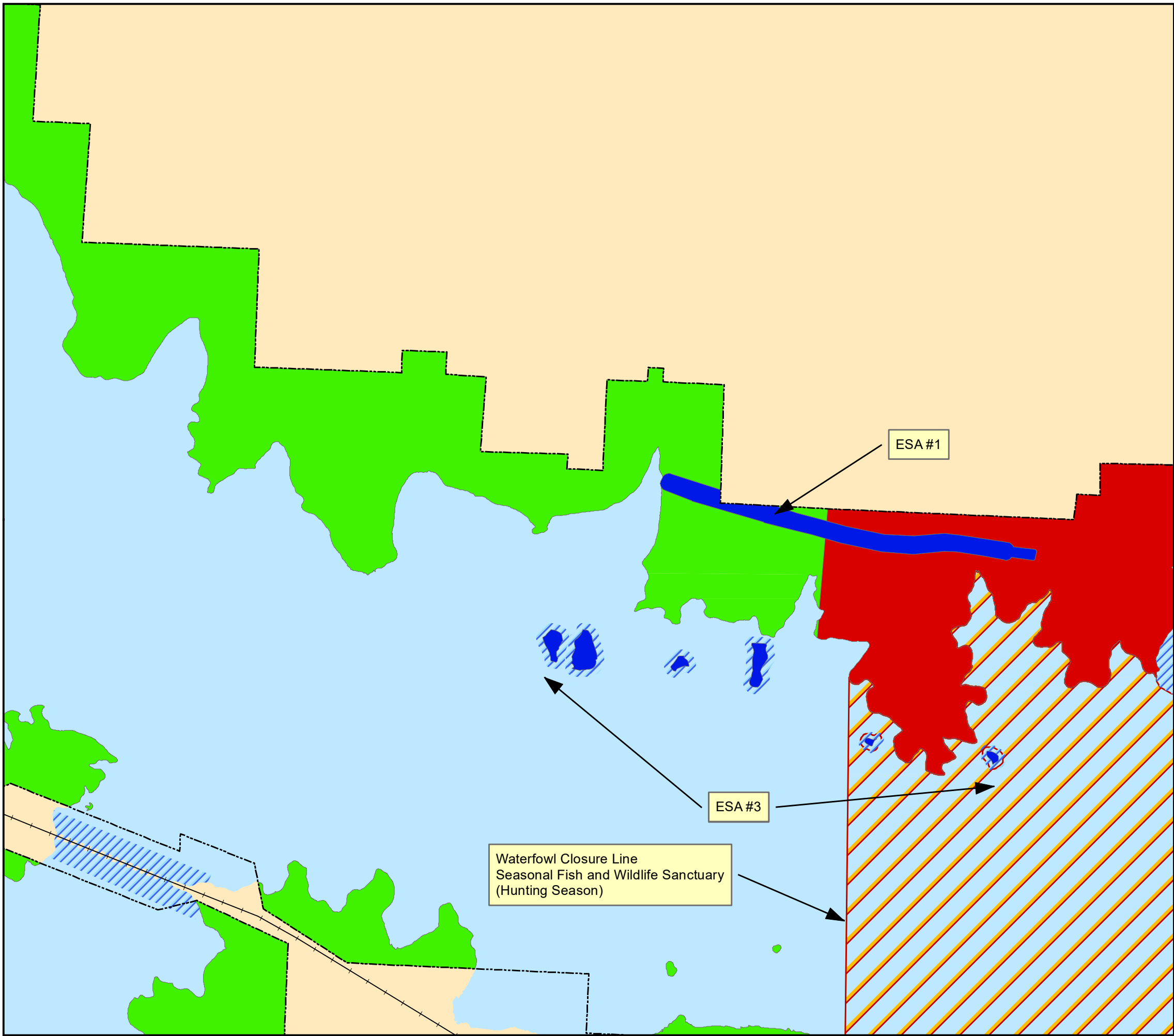
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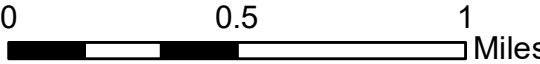

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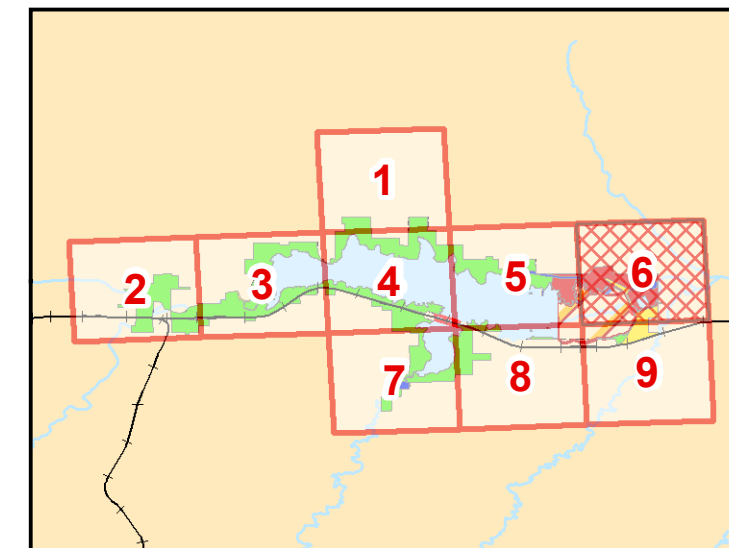
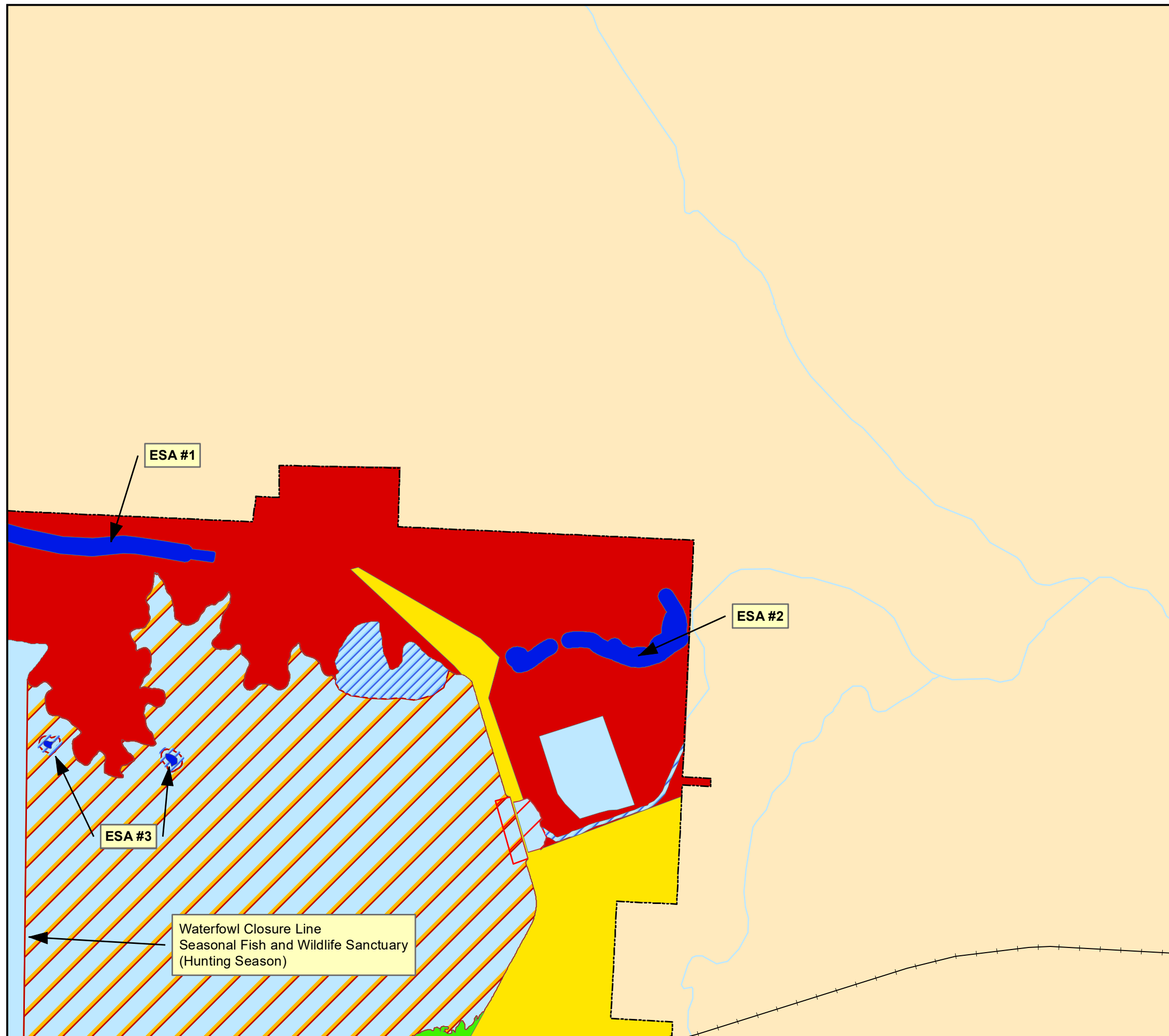
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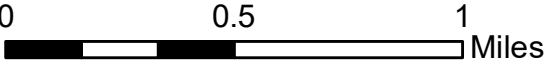
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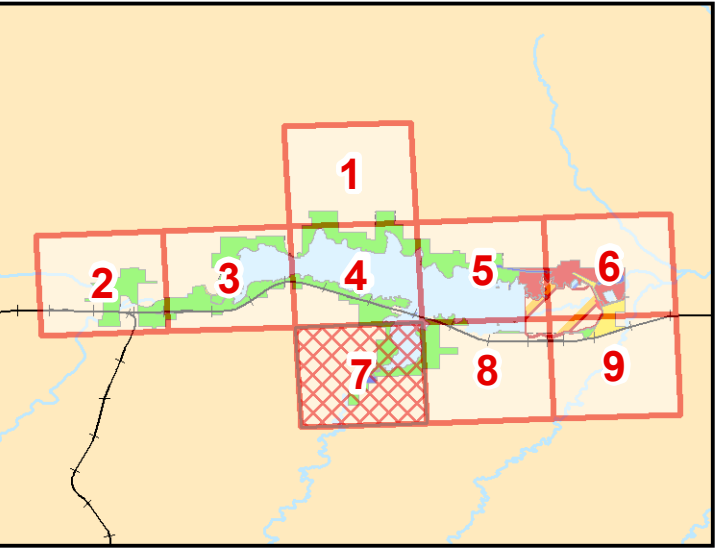
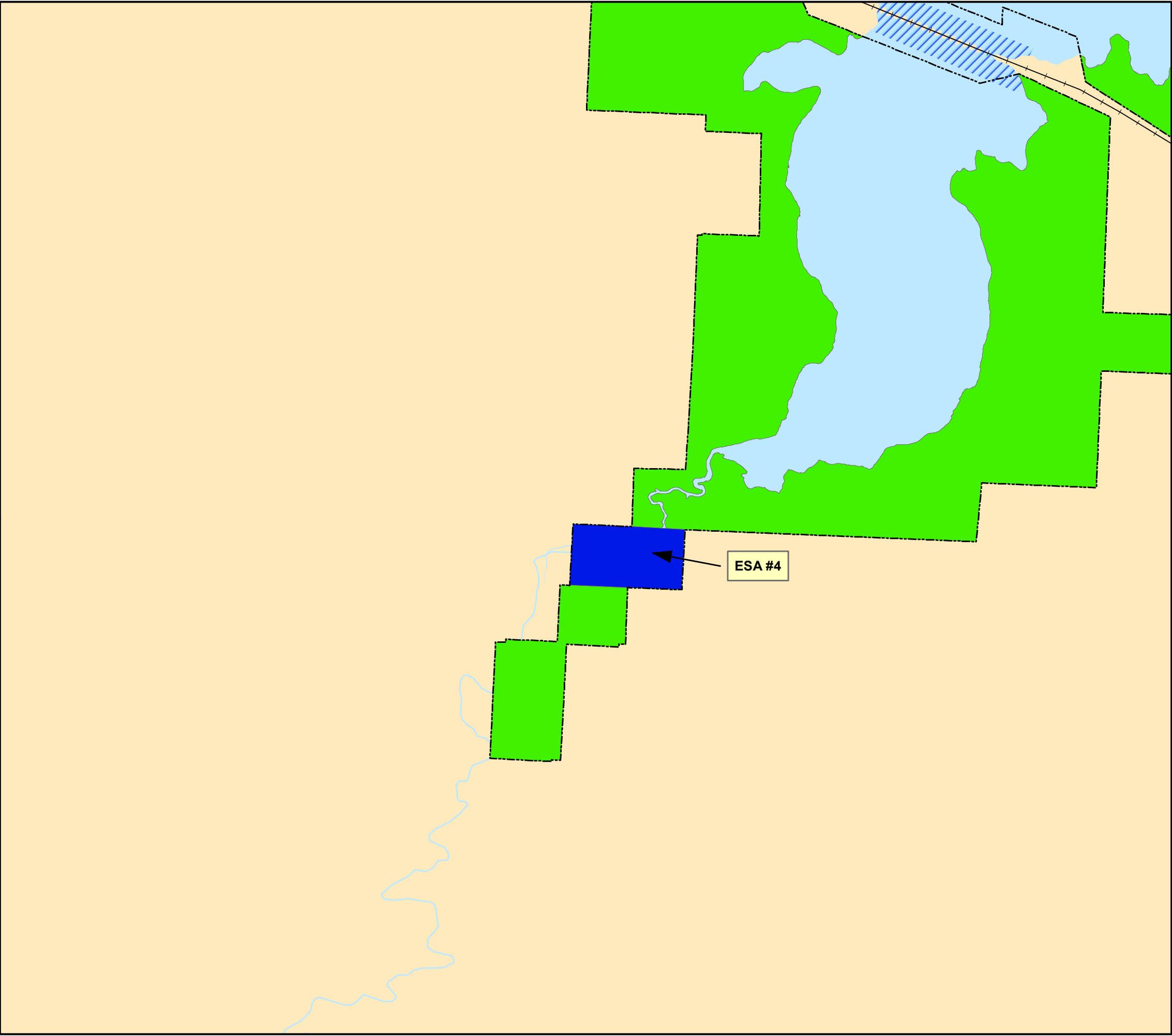
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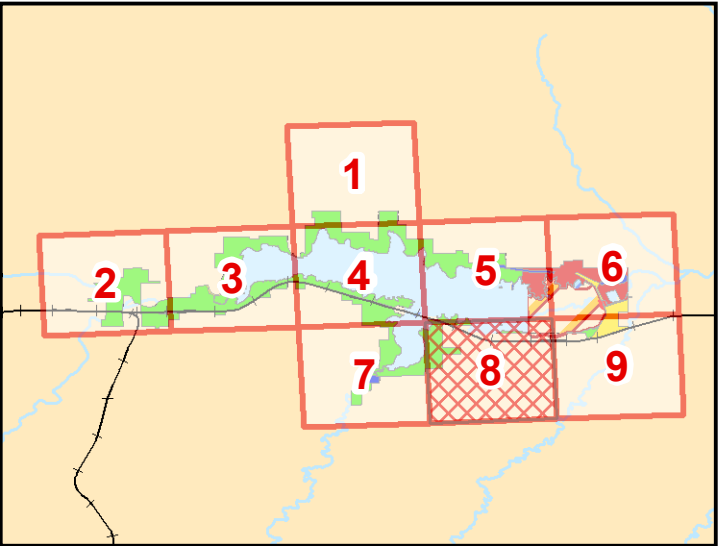
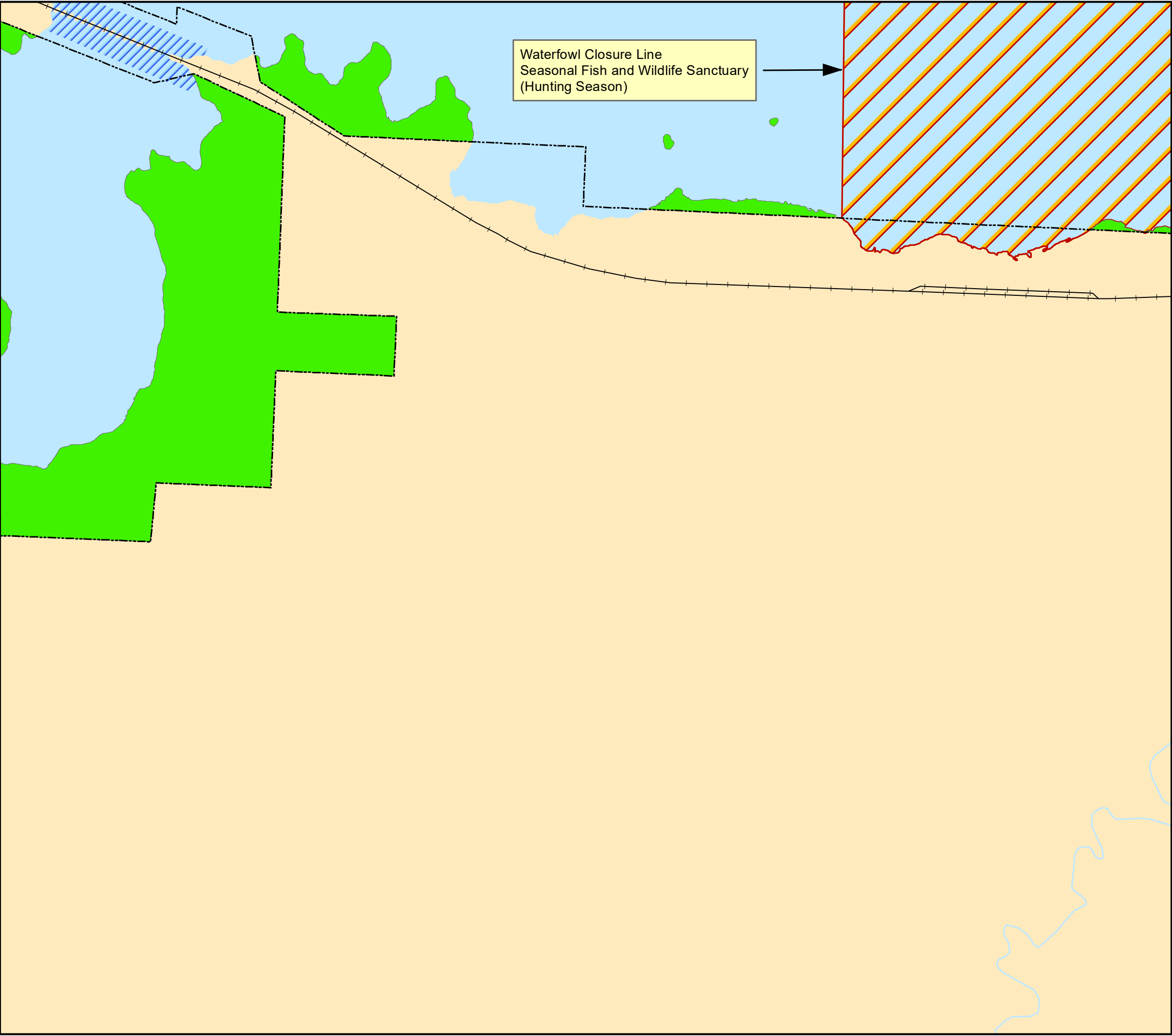
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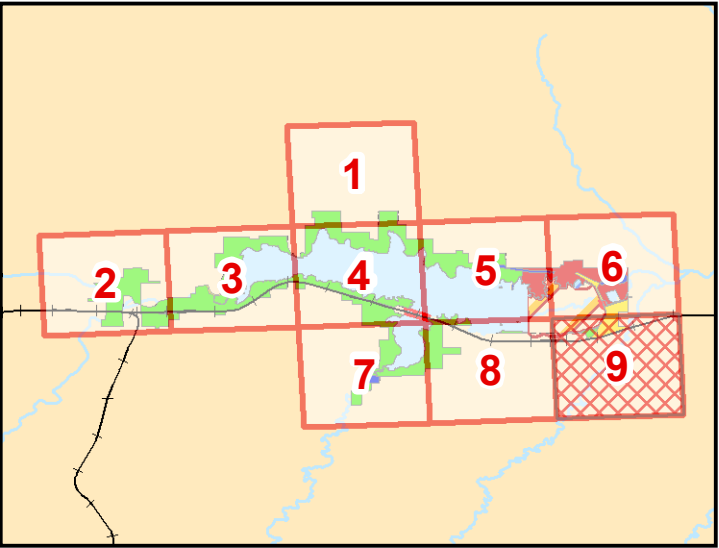
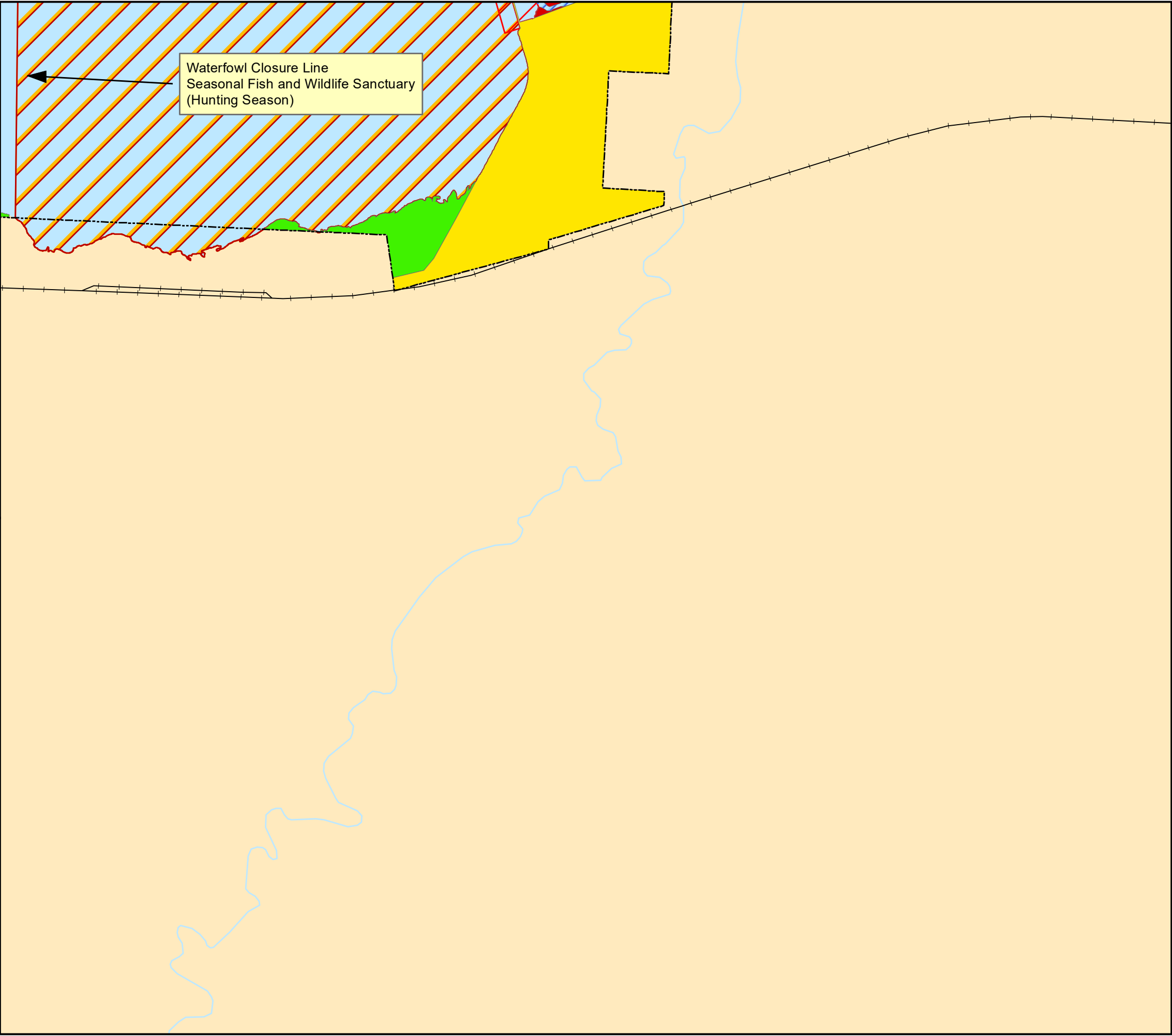
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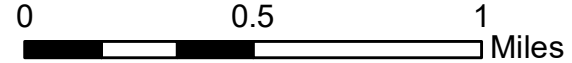

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JOHN MARTIN MASTER PLAN

LAND AND WATER CLASSIFICATIONS  
( SHEET 09)



DATE:  
APRIL 2018

MAP NO.  
JM17MP-OC-09

# LEGEND

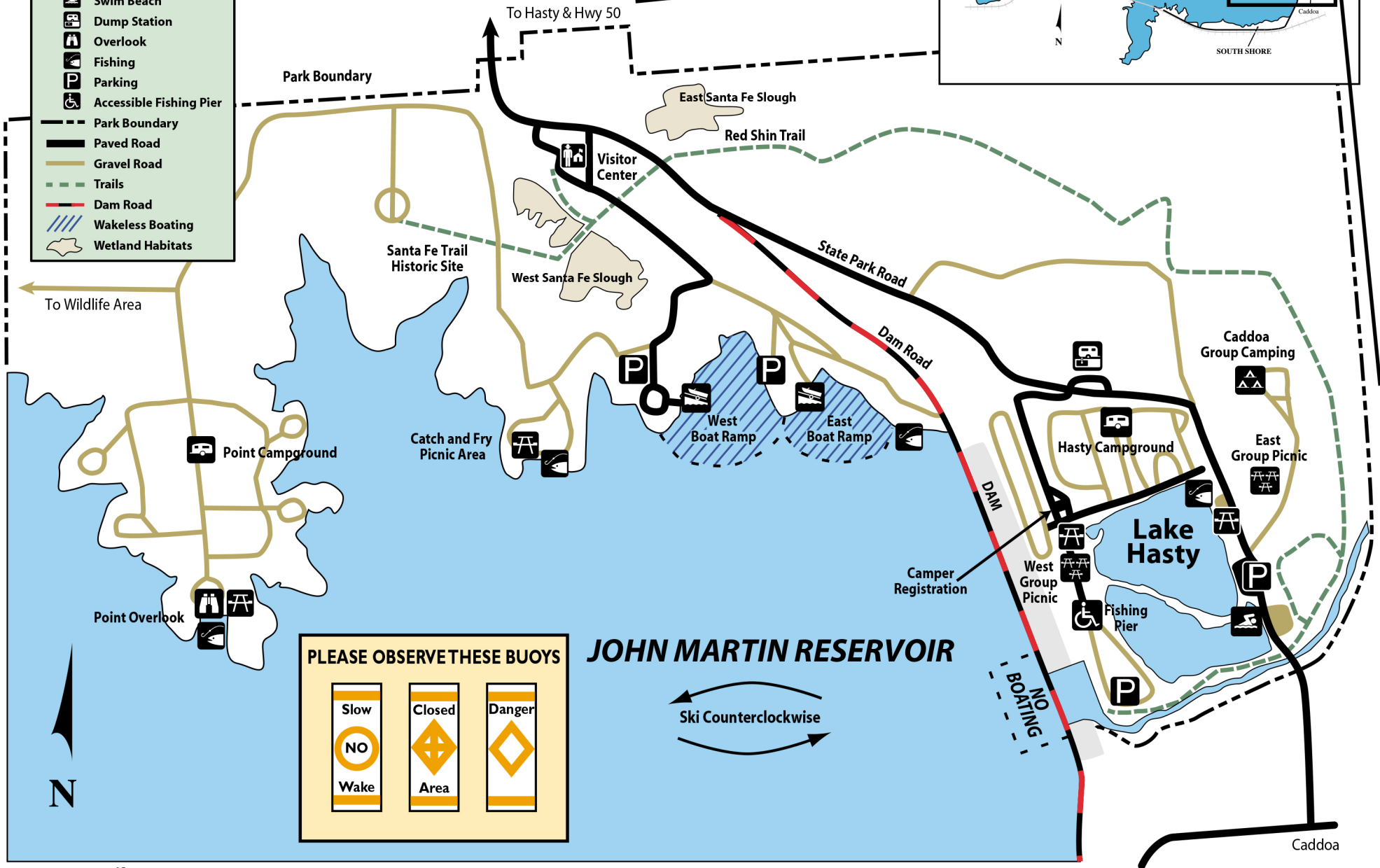
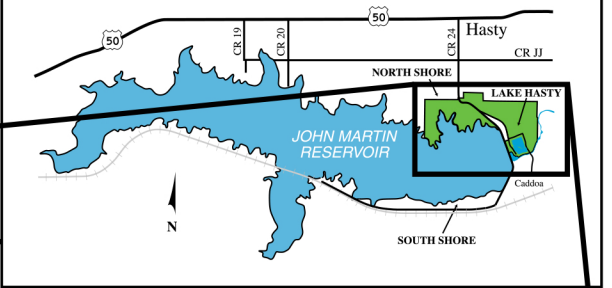
- Visitor Center
- Camping
- Group Camping
- Group Picnic Area
- Picnic Area
- Boat Ramp
- Swim Beach
- Dump Station
- Overlook
- Fishing
- Parking
- Accessible Fishing Pier

- Park Boundary
- Paved Road
- Gravel Road
- Trails
- Dam Road
- Wakeless Boating
- Wetland Habitats



## JOHN MARTIN RESERVOIR STATE PARK

### Overview Map



**PLEASE OBSERVE THESE BUOYS**

Slow	Closed	Danger
Wake	Area	

Map Detail

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## **APPENDIX B - NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DOCUMENTATION**



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# **Environmental Assessment for the JOHN MARTIN RESERVOIR Master Plan**

Arkansas River Basin  
Bent County, Colorado



June 2018

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**FINDING OF NO SIGNIFICANT IMPACT  
ENVIRONMENTAL ASSESSMENT FOR THE  
JOHN MARTIN RESERVOIR MASTER PLAN  
Bent County, Colorado**

In accordance with the National Environmental Policy Act of 1969, including guidelines in 33 Code of Federal Regulations Part 230, the Albuquerque District and the Regional Planning and Environmental Center (RPEC) of the U.S. Army Corps of Engineers (USACE) have assessed the potential impacts that the alternative management scenarios set forth in the 2018 John Martin Reservoir Master Plan would have on the natural, cultural, and human environments.

The 2018 Master Plan is a revision of the 1974 Master Plan, which was an update of the original 1947 Master Plan. A minor amendment occurred in 1980; however, it did not change the 1974 Master Plan substantially. The amended 1974 Master Plan has served well past its intended 25-year planning horizon.

Under the No Action Alternative, the USACE would take no action, which means the Master Plan land uses would not be revised. With this alternative, no new resources analysis or land-use classifications would occur. The operation and management of John Martin Reservoir would continue as outlined in the current 1974 Master Plan.

The Proposed Action includes a revised Master Plan, coordination with the public, and updates to comply with current USACE regulations and guidance and reflect ecological, socio-demographic, and outdoor recreation trends that are currently impacting the lake, as well as those anticipated to occur within the planning period of 2018 to 2043, a 25-year period. Land classifications were refined to meet authorized project purposes and current resource objectives, addressing a mix of natural resource and recreation management objectives that are compatible with regional goals. Required surface water and land classification changes associated with the Proposed Action include reclassifications to balance resource objectives, as follows:

<b>Water Surface Classification</b>	<b>Proposed Action Description</b>	<b>Justification</b>
Restricted	Reclassification of 30 acres to Restricted in areas near the dam and swimming beaches.	Restricted waters are areas where recreational boating is prohibited or restricted for reasons of project operations, safety and security, such as near swim beaches and the dam.
Designated – No Wake	Reclassification of 180 acres of water surface to designated No-Wake in areas near boat launches and sensitive shorelines.	Designated No-Wake areas are intended to protect environmentally sensitive shorelines and improve boating safety near key recreational water access such as boat ramps.
Fish and Wildlife Sanctuary	There are 2,055 acres of water surface under a Fish and Wildlife Sanctuary seasonal classification, which runs from November 1 <sup>st</sup> through mid-February. These acres are consider Open	Fish and Wildlife Sanctuary waters are managed with annual or seasonal restrictions to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning.

<b>Water Surface Classification</b>	<b>Proposed Action Description</b>	<b>Justification</b>
	Recreation during the remainder of the year.	
Open Recreation	A total of 9,219 acres is classified as Open Recreation at John Martin Reservoir	Open recreation includes all water surface available for year around or seasonal water-based recreation use.
	A total of 235 acres were added to the total water surface	Added acres were as a result of better measurement technology, areas added that were previously left off, and sedimentation and erosion activities since 1974.
<b>Land Classification</b>	<b>Proposed Action Description</b>	<b>Justification</b>
Project Operations (PO)	The increase in PO from 438 acres to 514 acres resulted from reclassifying the strip of PO including the dam and extending north as follows: <ul style="list-style-type: none"> <li>• 57 acres from HDR</li> <li>• 19 acres from Water Surface</li> </ul>	All lands converted to PO have historically been used in support of critical operational requirements related to the primary missions of flood risk management and water conservation.
High Density Recreation (HDR)	Lands under the prior classification of Operations – Intense Use were converted to the new and similar classification of HDR and were increased from 680 acres to 1,307 acres by the following reclassifications: <ul style="list-style-type: none"> <li>• 809 acres from LDR to HDR above the conservation pool within the current State Park lease</li> <li>• 3 acres to WM</li> <li>• 50 acres to ESA</li> <li>• 57 acres to PO</li> <li>• 72 acres to Water Surface</li> </ul>	<p>The acres reclassified from LDR to HDR reflect the current and future use of those lands.</p> <p>The acres of HDR reclassified as ESA was done to protect cultural or habitat sites.</p> <p>The acres converted to water surface were a result of correcting previously misclassified acres, more accurate measurement systems, and lands created as a result of siltation around the reservoir, Lake Hasty, the stilling basin, and the river.</p>
Environmentally Sensitive Areas (ESA)	The reclassification of 227 acres as ESA resulted from converting acres to ESA as follows: <ul style="list-style-type: none"> <li>• 50 acres from HDR</li> <li>• 45 acres from LDR</li> <li>• 132 acres from WM</li> </ul>	Lands classified as ESA are given the highest order of protection among possible land classifications. The classification change was necessary to recognize areas at the project having the highest ecological value for: 1) protection of important habitat for the endangered Interior Least Tern and threatened Piping Plover as designated by the USFWS, and 2) to protect unique views, and cultural and archeological sites. The ESA designation for these areas may require a change in management and may have an

Water Surface Classification	Proposed Action Description	Justification
		effect on current or projected public use. As the water surface drops below the conservation pool, additional acreage on the south shore of the reservoir are classified as ESA based on high usage of the area by Interior Least Tern and Piping Plover.
Multiple Resource Management Lands (MRML) -- Low Density Recreation (LDR)	No acres are classified as LDR at John Martin Reservoir as the previous 1,213 acres of LDR acres were reclassified as follows: <ul style="list-style-type: none"> <li>• 809 acres to HDR</li> <li>• 45 acres to ESA</li> <li>• 359 acres to Water Surface</li> </ul>	The previous area designated as <i>Secondary Allocation to Low Density Recreation</i> was converted to other classification categories to reflect the current and future planned use. The conversion of these lands will have no effect on current or projected public use.
MRML -- Wildlife Management (WM)	WM changed from 8,246 acres to 8,602 acres by converting: <ul style="list-style-type: none"> <li>• 132 acres to ESA</li> <li>• 3 acres to PO</li> <li>• 3 acres from HDR</li> <li>• 117 acres from Water Surface</li> <li>• 371 acres from sedimentation and better GIS measurement system</li> </ul>	Lands reclassified as WM are better suited for a higher level of protection. The remaining acre changes were a result of siltation and improved measurement technology, and correction of previously misclassified acres. The reclassification of these lands will have no effect on current or projected public use.
MRML -- Vegetation Management (VM)	No acres are classified as VM areas.	
MRML -- Future/Inactive Recreation Area	No acres are classified as Future and Inactive Recreation.	

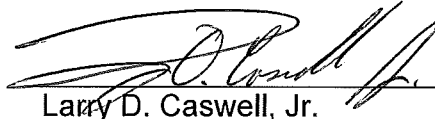
(1) The surface water and land classification changes described in this table are the result of changes to individual parcels of land ranging from a few acres to several hundred acres. New acreages and shoreline miles were measured using more accurate GIS technology, thus total changes will not equal individual changes. The acreage numbers provided are approximate.

The Proposed Action was chosen because it would meet regional goals associated with good stewardship of land and water resources, would meet regional recreation goals, and would allow for continued use and development of project lands without violating national policies or public laws.

The EA and comments received from other agencies have been used to determine whether the Proposed Action requires the preparation of an Environmental Impact Statement (EIS). All environmental, social, and economic factors that are relevant to the recommended alternative were considered in this assessment. These include, but are not limited to, climate and climate change, environmental justice, cultural resources, air quality, visual aesthetics, prime farmland, water quality, wild and scenic rivers, wetlands, fish and wildlife, invasive species, migratory birds, recreational fisheries, and threatened and endangered species.

Based on the EA, it is my finding that the revision of the Master Plan for John Martin Reservoir will have no significant adverse impact on the environment and will not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, an EIS will not be prepared.

13 July 2018  
Date

  
\_\_\_\_\_  
Larry D. Caswell, Jr.  
Lieutenant Colonel, U.S. Army  
District Commander



## ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Environmental Assessment (EA) evaluates the potential environmental and socioeconomic impacts of the John Martin Reservoir Master Plan revision. This EA will facilitate the decision process regarding the Proposed Action and alternatives.

- SECTION 1*      *INTRODUCTION* of the Proposed Action summarizes the purpose of and need for the Proposed Action, provides relevant background information, and describes the scope of the EA.
- SECTION 2*      *PROPOSED ACTION AND ALTERNATIVES* examines alternatives for implementing the Proposed Action and describes the recommended alternative.
- SECTION 3*      *AFFECTED ENVIRONMENT* describes the existing environmental and socioeconomic setting.
- ENVIRONMENTAL CONSEQUENCES* identifies the potential environmental and socioeconomic effects of implementing the Proposed Action and alternatives.
- SECTION 4*      *CUMULATIVE IMPACTS* describes the impact on the environment that may result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions.
- SECTION 5*      *COMPLIANCE WITH ENVIRONMENTAL LAWS* provides a listing of environmental protection statutes and other environmental requirements.
- SECTION 6*      *IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES* identifies any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action should it be implemented.
- SECTION 7*      *PUBLIC AND AGENCY COORDINATION* provides a listing of individuals and agencies consulted during preparation of the EA.
- SECTION 8*      *REFERENCES* provides bibliographical information for cited sources.
- SECTION 9*      *ACRONYMS/ABBREVIATIONS*

*SECTION 10*      *LIST OF PREPARERS* identifies persons who prepared the document and their areas of expertise.

*APPENDIX A*      NEPA Coordination and Scoping

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# **ENVIRONMENTAL ASSESSMENT**

## **Master Plan**

### **John Martin Reservoir Bent County, Colorado**

## **SECTION 1: INTRODUCTION**

The United States Army Corps of Engineers (USACE) is proposing to adopt and implement the 2018 John Martin Reservoir Lake Master Plan (2018 Master Plan). The 2018 Master Plan (MP) is a revision of the 1974 MP, which updated the original MP from 1947. A minor amendment to the 1974 MP occurred in 1980; however, it did not change the 1974 MP substantially. The 2018 MP is the strategic land use management document that guides the efficient, cost-effective, comprehensive management, development, and use of recreation, natural resources, and cultural resources throughout the life of the John Martin Reservoir project. It is a vital tool for responsible stewardship and sustainability of the project's natural and cultural resources, as well as the provision of outdoor recreation facilities and opportunities on Federal land associated with John Martin Reservoir for the benefit of present and future generations.

Adoption and implementation of the 2018 MP (Proposed Action) would create potential impacts on the natural and human environments, and as such, this Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, (Public Law 91-190), and 33 Code of Federal Regulations (CFR) Part 230.

### **1.1 PROJECT LOCATION AND SETTING**

John Martin Dam and Reservoir project is located in Bent County, Colorado within the Arkansas River basin. The basin has a drainage area of 18,130 miles above the dam, which is located at River Mile 1,159, about midway between the communities of Lamar and Las Animas (see Figure 1.1 in the 2018 MP). The dam is approximately 58 miles upstream of the Colorado-Kansas state boundary.

The Arkansas River has become a perennial river with highly fluctuating annual and seasonal flows due to varying amounts of spring runoff from snow-pack in the mountains, large seasonal rain events, and droughts. Today, the river is highly regulated for agricultural purposes, and John Martin Reservoir is a temporary storage facility for the conservation of irrigation water. The dam and associated infrastructure, as well as all the lands acquired for the John Martin Reservoir project, are Federally-owned and are administered by the U.S. Army Corps of Engineers (USACE), Albuquerque District.

John Martin Dam and Reservoir was authorized by Congress in the Flood Control Act of 1936 (Public Law 74-738) as amended by the Flood Control Act of 1938 (Public Law 75-761) and was constructed by USACE. Originally entitled "Caddoa Dam and Reservoir", the project name was changed by an act of Congress (Public Law 76-667) to honor John A. Martin, the late Congressman from Colorado. The original project legislation authorized John Martin Dam and Reservoir to be operated for flood control and conservation storage of irrigation supply. The flood control act of 1965 (Public Law



89-298) further authorized the establishment of a permanent pool not to exceed 10,000 acre-feet for fish and wildlife and recreational purposes.

Construction at John Martin Dam began in 1939 with the relocation of approximately 20 miles of the Atchison, Topeka, and Santa Fe Railway tracks. Dam construction began in August 1940, but work was suspended in the spring of 1943 due to World War II. Construction resumed in the spring of 1946 and the project was completed in October 1948.

The dam and associated infrastructure, as well as all the lands acquired for the John Martin Reservoir project, are federally-owned and administered by the USACE, Albuquerque District.

Environmental stewardship, though not listed as a primary project purpose, is a major responsibility and inherent mission in the administration of federally owned lands. Other laws, including but not limited to Public Law 91-190, National Environmental Policy Act of 1969 (NEPA), and Public Law 86-717, Forest Cover Act, place emphasis on the environmental stewardship of Federal lands and USACE-administered Federal lands, respectively.

## **1.2 PURPOSE OF AND NEED FOR THE ACTION**

The purpose of the Proposed Action is to ensure that the conservation and sustainability of the land, water, and recreational resources on John Martin Reservoir are in compliance with applicable environmental laws and regulations, and to maintain quality lands for future public use. The 2018 MP is intended to serve as a comprehensive land and recreation management plan with an effective life of approximately 25 years.

The need for the Proposed Action is to bring the 1974 MP up to date and to reflect ecological, socio-political, and socio-demographic changes that are currently affecting John Martin Reservoir, as well as those changes anticipated to occur through 2043. The John Martin Reservoir MP, originally published in 1947 then revised in 1974 as Design Memorandum 1, and amended in June of 1974, was sufficient for prior land use planning and management. Recent changes in outdoor recreation trends, regional land use, population, current legislative requirements and USACE management policy have indicated the need to revise the plan. Additionally, increasing fragmentation of wildlife habitat, national policies related to climate change and growing demand for recreational access and protection of natural resources are all factors affecting John Martin Reservoir and the region in general. In response to these continually evolving trends, the USACE determined that a full revision of the 1974 plan would be required.

The following factors may influence reevaluation of management practices and land uses:

- Changes in national policies or public law mandates
- Operations and maintenance budget allocations
- Recreation area closures
- Facility and infrastructure improvements
- Cooperative agreements with stakeholder agencies (such as Colorado Division of Parks and Wildlife [CPW] and the U.S. Fish and Wildlife Service [USFWS]) to operate and maintain public lands
- Evolving public concerns

### **1.3 SCOPE OF THE ACTION**

This EA addresses the implementation of the 2018 MP, with special attention given to revised land classifications, new resource management objectives, and a conceptual resource plan for each land classification category. The EA also analyzes the potential impacts that implementing the MP would have on the natural, cultural, and human environments.

The typical focus of NEPA compliance consists of environmental impact assessments for individual projects, rather than for long-range plans. However, application of NEPA to more strategic decisions not only meets the Council on Environmental Quality (CEQ) implementing regulations (CEQ 2005) and USACE regulations for implementing NEPA (USACE 1988), but also allows the USACE to consider the environmental consequences of its actions long before any physical activity is implemented. Multiple benefits can be derived from such early consideration. Effective and early NEPA integration with the master planning process can significantly increase the usefulness of the 2018 MP to decision makers.

NEPA documents prepared concurrently with a revised MP can influence and modify strategic land use decisions, whereas environmental impact documents prepared after a MP has been updated would have little influence on strategic decisions already included in the plan. The intent of the MP is to develop a strategic land use management document that guides the efficient, cost-effective, comprehensive management, development, and use of recreation, natural resources, and cultural resources throughout the life of the John Martin Reservoir project. It is a vital tool for responsible stewardship and sustainability of the project's natural and cultural resources, and the provision of outdoor recreation facilities and opportunities on Federal land associated with John Martin Reservoir for the benefit of present and future generations. The 2018 MP guides and articulates USACE responsibilities pursuant to Federal laws to preserve, conserve, restore, maintain, manage, and develop the land, water, and associated resources. It is not feasible to define the exact nature of potential impacts for all potential actions prior to receiving specific project proposals. Therefore, environmental consequences may be less than or may, in fact, exceed what is described in this EA. To ensure that future environmental consequences are identified and documented as accurately as possible, additional NEPA coordination will be conducted, as appropriate, for future projects that are the result of the implementation of the 2018 MP.

## **SECTION 2: PROPOSED ACTION AND ALTERNATIVES**

The project need is to revise the 1974 MP so that it is compliant with current USACE regulations and guidance, incorporates public needs, and recognizes surrounding land use and recreational trends. As part of this process, which includes public outreach and comment, two alternatives were developed for evaluation, including a No Action Alternative. The alternatives were developed using land classifications that indicate the primary use for which project lands would be managed. USACE regulations specify five possible categories of land classification: Project Operations (PO), High Density Recreation (HDR), Mitigation, Environmentally Sensitive Areas (ESA), and Multiple Resource Managed Lands (MRML). MRML are divided into four subcategories: Low Density Recreation (LDR), Wildlife Management (WM), Vegetative Management (VM) and Future/Inactive Recreation Areas.

The USACE guidance recommends the establishment of resource goals and objectives for purposes of development, conservation, and management of natural, cultural, and man-made resources at a project. Goals describe the desired end state of overall management efforts, whereas resource objectives are specific task-oriented actions necessary to achieve the overall MP goals. Goals and objectives are guidelines for obtaining maximum public benefits while minimizing adverse impacts on the environment and are developed in accordance with 1) authorized project purposes, 2) applicable laws and regulations, 3) resource capabilities and suitabilities, 4) regional needs, 5) other governmental plans and programs, and 6) expressed public desires.

In the context of the 2018 MP, goals express the overall desired end state of the MP, whereas resource objectives are specific task-oriented actions necessary to achieve the MP goals. The objectives in the 2018 MP are intended to provide project benefits, meet public needs, and foster environmental sustainability of John Martin Reservoir to the greatest extent possible. The goals for the John Martin Reservoir MP include the following:

- Goal A: Provide the best management practices (BMPs) to respond to regional needs, resource capabilities and capacities, and expressed public interests consistent with authorized project purposes.
- Goal B: Protect and manage project natural and cultural resources through sustainable environmental stewardship programs.
- Goal C: Provide public outdoor recreation opportunities that support project purposes and public interests while sustaining project natural resources.
- Goal D: Recognize the unique qualities, characteristics, and potentials of the project.
- Goal E: Provide consistency and compatibility with natural objectives and other state and regional goals and programs.

In addition to the above goals, USACE management activities are also guided by USACE-wide Environmental Operating Principles as follows:

- Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse and sustainable condition is necessary to support life.
- Recognize the interdependence of life and the physical environment. Proactively consider environmental consequences of USACE programs and act accordingly in all appropriate circumstances.
- Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.
- Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.
- Seek ways and means to assess and mitigate cumulative impacts on the environment; bring systems approaches to the full life cycle of our processes and work.
- Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work.

- Respect the views of individuals and groups interested in USACE activities; listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

Specific resource objectives to accomplish these goals can be found in Chapter 3 of the 2018 MP.

The Proposed Action would meet regional goals associated with good stewardship of land and water resources, would meet regional recreation goals, would address identified recreational trends, and would allow for continued use and development of project lands without violating national policies or public laws.

## **2.1 ALTERNATIVE 1: NO ACTION ALTERNATIVE**

Under the No Action Alternative, the USACE would not approve the adoption or implementation of the 2018 MP. Instead, the USACE would continue to manage John Martin Reservoir's natural resources as set forth in the 1974 MP. The 1974 MP would continue to provide the only source of comprehensive management guidelines and philosophy. However, the 1974 MP is out of date and does not reflect the current ecological, socio-political, or socio-demographic conditions of John Martin Reservoir or those that are anticipated to occur through 2043. The No Action Alternative, while it does not meet the purpose of or need for the Proposed Action, serves as a benchmark of existing conditions against which Federal actions can be evaluated, and as such, the No Action Alternative is included in this EA, as prescribed by CEQ regulations.

## **2.2 ALTERNATIVE 2: PROPOSED ACTION**

Under the Proposed Action, the USACE proposes to adopt and implement the 2018 MP. The 2018 MP would replace the 1974 MP and provide an up-to-date management plan that follows current Federal laws and regulations while sustaining John Martin Reservoir's natural resources and providing recreational experiences for the next 25 years.

The 2018 MP proposes to classify all Federal land lying above elevation 3,851.0 National Geodetic Vertical Datum 1929 (NGVD29) into management classification categories. These management classification categories would allow uses of Federal property that meet the definition of the assigned category and ensure the protection of natural resources and environmental stewardship while allowing maximum public enjoyment of the lake's resources.

The proposed land classification categories are defined as follows:

- Project Operations: Lands required for the dam, spillway, switchyard, levees, dikes, offices, maintenance facilities, and other areas used solely for the operation of John Martin Reservoir.
- High Density Recreation: Lands developed for the intensive recreational activities for the visiting public including day use and campgrounds. These areas could also be for commercial concessions and quasi-public development.
- Environmentally Sensitive Areas: Areas where scientific, ecological, cultural, or aesthetic features have been identified.

- Multiple Resource Management Lands: Allows for the designation of a predominate use with the understanding that other compatible uses may also occur on these lands.
  - MRML - Low Density Recreation: Lands with minimal development or infrastructure that support passive recreational use (primitive camping, fishing, hunting, trails, wildlife viewing, etc.).
  - MRML - Wildlife Management: Lands designated for stewardship of fish and wildlife resources.
  - MRML – Vegetation Management: Lands designated for stewardship of forest, prairie, and other native vegetative cover.
  - Future or Inactive Recreation. These are lands with site characteristics compatible with HDR development but the development anticipated in prior land classifications either never took place or was minimal. These areas are typically closed to vehicular traffic and will be managed as MRML until development takes place.
- Water Surface: Allows for water surface zones.
  - Restricted: Water areas restricted for John Martin Reservoir operations, safety, and security.
  - Designated No-Wake: Water areas to protect environmentally sensitive shoreline areas and recreational water access areas from disturbance, and areas to protect public safety.
  - Open Recreation: Water areas available for year-round or seasonal water-based recreational use.

Table 2-1 shows the proposed classifications and acres contained in each classification, Table 2-2 shows the surface water classifications, and Table 2-3 provides the justification for the proposed reclassification.

**Table 2-1. Proposed John Martin Reservoir Land Classifications**

1974 Land Classifications	Acres	Proposed New Land Classifications	Acres
Operations and Maintenance	438	PO	514
Operations – Recreation Intensive Use	680	HDR	1,307
Secondary Allocated to Low Density Recreation	1,213	MRML - LDR	0
		ESA	227
Operations – Wildlife Management (minus water surface area)	8,246	MRML – WM	8,602
		MRML – VM	0
		Future/Inactive Recreation	0

\*Land classification acreages were derived using geographic information system (GIS) technology and do not reflect the official land acquisition records. The total land classification acres listed in the 1974 John Martin Reservoir MP were 10,400. The current land classification acres in the 2018 MP are 10,650.

Source: USACE 2018

**Table 2-2. Proposed John Martin Reservoir Surface Water Classifications**

Classification	Acres
Restricted	30
Designated No-Wake	180
Open Recreation	9,219
Fish and Wildlife Sanctuary	2,055

Source: USACE 2018

**Table 2-3. Justification for the Proposed Reclassifications**

Land Classification	Proposed Action Description	Justification
PO	The increase in PO from 438 acres to 514 acres resulted from reclassifying the strip of PO including the dam and extending north as follows: <ul style="list-style-type: none"> <li>• 57 acres from HDR</li> <li>• 19 acres from Water Surface</li> </ul>	All lands converted to PO have historically been used in support of critical operational requirements related to the primary missions of flood risk management and water conservation.
HDR	Lands under the prior classification of Operations – Intense Use were converted to the new and similar classification of HDR and were increased from 680 acres to 1,307 acres by the following reclassifications: <ul style="list-style-type: none"> <li>• 809 acres from LDR to HDR above the conservation pool within the current State Park lease</li> <li>• 3 acres to WM</li> <li>• 50 acres to ESA</li> <li>• 57 acre to PO</li> <li>• 72 acres to Water Surface</li> </ul>	<p>The acres reclassified from LDR to HDR reflect the current and future use of those lands.</p> <p>The acres of HDR reclassified as ESA was done to protect cultural or habitat sites.</p> <p>The acres converted to water surface were a result of correcting previously misclassified acres, more accurate measurement systems, and lands created as a result of siltation around the reservoir, Lake Hasty, the stilling basin, and the river.</p>
ESA	The reclassification of 227 acres as ESA resulted from converting acres to ESA as follows: <ul style="list-style-type: none"> <li>• 50 acres from HDR</li> <li>• 45 acres from LDR</li> <li>• 132 acres from WM</li> </ul>	Lands classified as ESA are given the highest order of protection among possible land classifications. The classification change was necessary to recognize areas at the project having the highest ecological value for: 1) protection of important habitat for the endangered Interior Least Tern and threatened Piping Plover as designated by the USFWS, and 2) to protect unique views, and cultural and archeological sites. The ESA designation for these areas may require a change in management and may have an effect on current or projected public use. As the water surface drops below the conservation pool, additional acreage on the south shore of the reservoir are classified as ESA based on high usage of the area by Interior Least Tern and Piping Plover.
MRML - LDR	No acres are classified as LDR at John Martin Reservoir as the previous	The previous area designated as <i>Secondary Allocation to Low Density</i>

Land Classification	Proposed Action Description	Justification
	<p>1,213 acres of LDR acres were reclassified as follows:</p> <ul style="list-style-type: none"> <li>• 809 acres to HDR</li> <li>• 45 acres to ESA</li> <li>• 359 acres to Water Surface</li> </ul>	<i>Recreation</i> was converted to other classification categories to reflect the current and future planned use. The conversion of these lands will have no effect on current or projected public use.
MRML - WM	<p>WM changed from 8,246 acres to 8,602 acres by converting:</p> <ul style="list-style-type: none"> <li>• 132 acres to ESA</li> <li>• 3 acres to PO</li> <li>• 3 acres from HDR</li> <li>• 117 acres from Water Surface</li> <li>• 371 acres from sedimentation and better GIS measurement system</li> </ul>	Lands reclassified as WM are better suited for a higher level of protection. The remaining acre changes were a result of siltation and improved measurement technology, and correction of previously misclassified acres. The reclassification of these lands will have no effect on current or projected public use.
MRML - VM	No acres are classified as VM areas.	
MRML – Future/Inactive Recreation Area	No acres are classified as Future and Inactive Recreation.	

Source: USACE 2018

### Project Operations

In the 2018 MP, there are 514 acres of land under this classification, all of which are managed by the USACE. Lands designated as PO are associated with the dam, spillway, levees, lake office, maintenance facilities, and other areas used primarily for the purposes of flood risk management and water conservation. The management plan for this area is to continue providing physical security necessary to ensure sustained operations of the dam and related facilities, including restricting public access in hazardous locations near the dam and spillway.

### High Density Recreation

The 2018 MP stipulates that lands managed under this classification are developed for intensive recreational activities for the visiting public, including day use areas and campgrounds, and encompass 1,307 acres. National USACE policy set forth in Engineering Regulation (ER) and Engineer Pamphlet (EP) 1130-2-550, Chapter 16, limits recreation development on USACE lands to those activities that are dependent on a project's natural resources and typically include water-based activities, overnight use, and day uses such as campgrounds, picnic areas, trails, swimming beaches, and boat launching ramps. Examples of activities that are not dependent on a project's natural resources include theme parks or ride-type attractions, sports or concert stadiums, and stand-alone facilities such as restaurants, bars, motels, hotels, and golf courses.

All HDR areas at John Martin Reservoir are leased to the CPW. The CPW is responsible for the operations and maintenance of their leased areas, and although USACE does not provide direct maintenance within any of the leased locations, it may occasionally lend support where appropriate. The 2018 MP (Sections 5.3.1, 5.3.2, and 5.3.3) describes the various areas that are leased by CPW from the USACE, and provides a conceptual management plan. Maps showing existing parks and facilities at John Martin Reservoir can be found in Appendix A of the 2018 MP.



## Environmentally Sensitive Areas

In the 2018 MP there are 227 acres designated as ESA at John Martin Reservoir. These are areas where scientific, ecological, cultural, or aesthetic features have been identified. Designation of these lands is not limited to just lands that are otherwise protected by laws such as the Endangered Species Act, the National Historic Preservation Act (NHPA), or applicable state statutes. These areas must be managed to ensure they are not adversely impacted. Typically, limited or no development of public use is allowed on these lands. No agricultural or grazing uses are permitted on these lands unless necessary for a specific resource management benefit, such as prairie restoration and management. These areas are typically distinct parcels located within another, and perhaps larger, land classification area. The majority of ESA acreage at John Martin Reservoir are excellent nesting habitat for the Interior Least Tern (*Sterna antillarum*) and Piping Plover (*Charadrius melodus*), both federally-listed bird species. In addition to endangered species habitat, a couple of sites are designated as ESA due to unique cultural resources. Consideration was also given to unique or scarce habitat types such as shortgrass prairie, sandhills, and riparian habitat when determining which areas should be designated as ESA.

Section 6.1 of the MP contains further detail for the management of threatened and endangered species occurring or likely to occur within an ESA. USACE has an Endangered Species Management Plan and has co-drafted the Tern and Plover Management Plan (USACE, 2002) with CPW that is informed by the 2001 Biological Opinion. Successful management of both the listed species and invasive species will require coordination and cooperation between CPW, USACE, and the public.

## Multiple Resource Management Lands

MRML are, as the name implies, lands that serve multiple purposes but that are sub-classified and managed for a predominant use. The following paragraphs describe the various sub-classifications of MRML at John Martin Reservoir, as well as the resource objectives, acreages, and management plan for each sub-classification.

### MRML – Low Density Recreation

These are lands with minimal development or infrastructure that support passive public use including, but not limited to, hiking, nature photography, bank fishing, and hunting. Future management of these lands calls for maintaining a healthy, ecologically adapted vegetative cover to reduce erosion and improve aesthetics. Prevention of unauthorized use such as trespass or encroachments is an important management objective for all USACE lands, but is especially important for those lands in close proximity to private development. These lands are typically open to the public, including adjacent landowners, for pedestrian traffic and are frequently used by adjacent landowners for access to the shoreline. The general public may use these lands for bank fishing, for hiking, and for access to the shoreline. Hunting may be allowed in select areas that are a reasonable and safe distance from adjacent habitable structures. Future uses may include additional designated natural surface hike/bike/equestrian trails. In the 1974 MP there were 1,213 acres designated as Secondary Allocated to Low Density Recreation, but in the 2018 MP, there are no acres of MRML -- Low Density Recreation lands at John Martin Reservoir.

### MRML – Wildlife Management

This land classification applies to lands managed primarily for the conservation of fish and wildlife. In the 2018 MP, there are 8,602 acres of land designated as MRML – WM at John Martin Reservoir. Future management of these lands calls for managing the habitat to support native, ecologically adapted vegetation which in turn supports native wildlife species. These lands generally include comparatively large contiguous parcels, most of which are located within the flood pool of the lake. Passive recreation uses such as natural surface trails, fishing, hunting, and wildlife observation are compatible with this classification unless restrictions are necessary to protect sensitive species or to promote public safety.

### MRML - Vegetative Management

These are lands designated for stewardship of forest, prairie, and other native vegetative cover. Passive recreation activities previously described may be allowed in these areas. There are no acres of land included in this classification at John Martin Reservoir.

### MRML - Future or Inactive Recreation

These are lands with site characteristics compatible with HDR development, but the development either never took place or was minimal. These areas are typically closed to vehicular traffic and will be managed as multiple resource management lands until development takes place. There are no acres of land included in this classification at John Martin Reservoir.

### Water Surface

In accordance with the national USACE policy set forth in EP 1130-2-550, the water surface of John Martin Reservoir at the conservation pool elevation may be classified using the following four classifications:

- Restricted
- Designated No-Wake
- Fish and Wildlife Sanctuary
- Open Recreation

These areas are typically marked by USACE or lessees with navigational or informational buoys or signs, or are denoted on public maps and brochures. The Water Surface Classification map can be found in Appendix A of the MP. At the conservation pool elevation of 3,851.0 feet NGVD29, John Martin Reservoir has a water surface area of 11,484 acres based on a 2013 Sedimentation Study. The following water surface classifications are designated at John Martin Reservoir:

#### Restricted

Restricted water surface includes those areas where recreation boating is prohibited or restricted for project operations, safety, and security purposes. These areas include the surface water upstream and downstream of the John Martin Dam. Restricted surface water at John Martin Reservoir consist of 30 acres near the dam and Lake Hasty.

### Designated No-Wake

Designated No-Wake areas are intended to protect environmentally sensitive shorelines and improve boating safety near key recreational water access areas such as boat ramps. Designated No-Wake surface water at John Martin Reservoir include approximately 180 acres around three public boat ramps, the channel under the train trestle and ESA land use areas. For ESA areas protecting listed bird habitat, these areas become “Restricted” during times of active nesting.

### Fish and Wildlife Sanctuary

This water surface classification applies to areas that are managed with annual or seasonal restrictions to protect fish and wildlife species during periods of migration, resting, feeding, nesting, or spawning. John Martin Reservoir has 2,055 acres classified as Fish and Wildlife Sanctuary on a seasonal basis that runs from November 1<sup>st</sup> through mid-February.

### Open Recreation

Open Recreation includes all surface water areas available for year-round or seasonal water-based recreational use. With the exception of the Restricted and Designated No-Wake areas described in the above paragraphs, the remaining water surface of approximately 9,219 acres at John Martin Reservoir water surface is designated as Open Recreation. Boaters are advised through maps, brochures, and/or signs at boat ramps, that navigational hazards may be present at any time and at any location in these areas. Operation of a boat in these areas is at the owner’s risk.

### Project Easement Lands

Project Easement lands are lands on which easement interests were acquired. Fee title was not acquired on these lands, but the easement interests convey to the Federal government certain rights to use or restrict the use of the land for specific purposes. Easement lands are typically classified as Operations Easement, Flowage Easement, or Conservation Easement. At John Martin Reservoir easements exist for flowage, roads, and utilities. A flowage easement, in general, grants to the government the perpetual right to temporarily flood/inundate private land during flood risk management operations and to prohibit activities on the Flowage Easement that would interfere with flood risk management operations, such as placement of fill material or construction of habitable structures. In the 2018 MP, there are 4,976 acres of flowage easement (USACE 2015 Operations Plan) at John Martin Reservoir.

## **SECTION 3: AFFECTED ENVIRONMENT AND CONSEQUENCES**

This section of the EA describes the natural and human environments that exist at the project and the potential impacts of the No Action Alternative (Alternative 1) and Proposed Action (Alternative 2), outlined in Section 2.0 of this document. Only those issues that have the potential to be affected by any of the alternatives are described, per CEQ guidance (40 CFR § 1501.7 [3]). Some topics are limited in scope due to the lack of direct effect from the Proposed Action on the resource or because that particular resource is not located within the project area. For example, no body of water in the John Martin Reservoir watershed is designated as a Federally Wild or Scenic River, so this resource will not be discussed.

Impacts (consequence or effect) can be either beneficial or adverse and can be either directly related to the action or indirectly caused by the action. Direct effects are caused by the action and occur at the same time and place (40 CFR § 1508.8 [a]). Indirect effects are caused by the action and are later in time or further removed in distance but are still reasonably foreseeable (40 CFR § 1508.8 [b]). As discussed in this section, the alternatives may create temporary (less than 1 year), short-term (up to 3 years), long-term (3 to 10 years following the master plan revision), or permanent effects.

Whether an impact is significant depends on the context in which the impact occurs and the intensity of the impact (40 CFR § 1508.27). The context refers to the setting in which the impact occurs and may include society as a whole, the affected region, the affected interests, and the locality. Impacts on each resource can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. For the purpose of this analysis, the intensity of impacts would be classified as negligible, minor, moderate, or major. The intensity thresholds are defined as follows:

- Negligible: A resource would not be affected or the effects would be at or below the level of detection, and changes would not be of any measurable or perceptible consequence.
- Minor: Effects on a resource would be detectable, although the effects would be localized, small, and of little consequence to the sustainability of the resource. Mitigation measures, if needed to offset adverse effects, would be simple and achievable.
- Moderate: Effects on a resource would be readily detectable, long-term, localized, and measurable. Mitigation measures, if needed to offset adverse effects, would be extensive and likely achievable.
- Major: Effects on a resource would be obvious and long-term, and would have substantial consequences on a regional scale. Mitigation measures to offset the adverse effects would be required and extensive, and success of the mitigation measures would not be guaranteed.

### **3.1 LAND USE**

John Martin Reservoir was originally authorized by the Flood Control Acts of 1936 and 1938. Construction on John Martin Dam began in 1940 and was completed in 1948. The total project area at John Martin Reservoir encompasses 25,443 acres. Of this total area, 20,467 acres were acquired in fee simple title by USACE. The 2018 MP with improved measurement technology, acreage additions, and sedimentation adjustments calculate 10,650 acres as land and 11,484 acres as surface water at normal or conservation pool elevation of 3,851.0 feet NGVD29. Above the area acquired in fee simple title, 4,976 acres of flowage easement were acquired (USACE 2015 Operations Plan). Purchase of flowage easement by the Government constitutes payment for the right to periodically inundate the easement area and for the damage and expense to the landowner resulting from project operation. Construction of buildings for habitation or alteration of the existing terrain in ways that reduce flood storage capacity are not permitted in the flowage easement area.

Outgrants at John Martin Reservoir include leases, licenses, easements, consents, permits, and others. At present there are 18 recorded outgrants in effect on

USACE lands and flowage easements at John Martin Reservoir. These outgrants include the following:

- 15 easements for roads and utilities
- 1 lease for Recreation/Park (CPW)
- 1 license for wildlife management, water areas, and construction and maintenance of a drainage ditch (CPW)

CPW holds leases or license to roughly 21,000 acres at John Martin Reservoir, including two units in John Martin Reservoir State Park. CPW is responsible for the operation and maintenance of their leased areas. USACE does not provide direct maintenance within any of the leased locations, but may occasionally lend support where appropriate. The USACE reviews requests and ensures compliance with applicable laws and regulations for proposed activities in all leased HDR areas and USACE PO lands. USACE works with partners to ensure that recreation areas are managed and operated in accordance with the objectives prescribed in Chapter 3 of the 2018 MP.

The following is a description of the public-use areas operated by CPW on USACE lands at John Martin Reservoir, some of which are highly developed, while others have only basic facilities and limited development. Collectively, the areas are managed by CPW as John Martin Reservoir State Park. Maps showing existing facilities can be found in Appendix A of the 2018 MP.

There is a 2001 Biological Opinion (BO) and an Albuquerque District Tern and Plover Management Plan (see Appendix C of the 2018 MP), which informs the management plans developed by the CPW as part of their lease requirement with USACE. An Environmental Assessment (USACE, 2001), which provides information concerning the management of the birds and their habitat, was completed at that time to address the leasing of park areas to CPW at John Martin Reservoir.

Following is a description of each area including the facilities they contain and a conceptual management plan.

***Lake Hasty Campground*** – Lake Hasty is a 73-acre former borrow area on the east side of the dam that was excavated during dam construction. The Hasty Campground is located below the dam and is open year round. This is a highly developed area, which has electrical hookups at 109 sites. In winter, a portion of the electrical hook-up sites are close due to overnight roosting of bald eagles in treed areas. The remaining sites are open. Potable water is available year round in various locations throughout the campground. All sites are at least 60 feet long, accommodating any size RV, motor home, trailer, camper, or tent. Besides electrical hookups and potable water, the Lake Hasty Campground offers a camper services building with flush restrooms, a laundry room, and coin-operated shower facilities. There is also a fish cleaning station, comfort station, a dump station, swimming beach, and a playground.

***Point Campground*** – This campground, located on the north shore of John Martin Reservoir, offers basic camping. This campground contains 104 sites, with vault toilets available in each loop; however there are no electrical hookups or water. Sitting on a ridge next to the reservoir, Point Campground offers exceptional views of the reservoir and surrounding landscape. The portion of the campground remains open in the winter, but the number of sites are reduced.

The park operations and maintenance activities on USACE owned leased lands are accomplished through the lease and include such activities as mowing, cleaning, building repairs, road repairs, utility repairs, trash removal, and related tasks.

### Trails

While there are numerous places to hike at John Martin Reservoir, the only specified trail is the Red Shin Hiking Trail. The trail begins at the stilling basin below the dam and winds through the park to the Santa Fe Historic Site on the north shore of the reservoir. The trail is approximately 4.5 miles long and provides excellent opportunities for wildlife viewing.

The trail is named after the legend of Red Shin, a Cheyenne warrior who lived in the Arkansas Valley around 1833. Compelled by a quarrel with another warrior over an Indian maiden, Red Shin armed himself with two flintlock muskets, a tomahawk, bow and arrows, and butcher knives. He then took refuge atop a tall rock formation located to the north of present-day Lake Hasty Campground. Other warriors joined the dispute and quickly attacked Red Shin from the valley below. Shooting arrows at his attackers with great accuracy, Red Shin convinced the attacking warriors to give up their futile assault or their lives would soon be lost. Ever since, the Dakota Sandstone formation found near the trail has been called Red Shin Standing Ground.

#### **3.1.1 Alternative 1: No Action Alternative**

The No Action Alternative for John Martin Reservoir is defined as the USACE taking no action, which means the MP would not be revised. No new resources analysis, resources management objectives, or land-use classifications would occur. The operation and maintenance of USACE lands at John Martin Reservoir would continue as outlined in the existing MP. Although this alternative does not result in a MP that meets current regulations and guidance, there would be no significant impacts on land uses on John Martin Reservoir project lands.

#### **3.1.2 Alternative 2: Proposed Action**

The objectives for revising the John Martin Reservoir MP were to describe current and foreseeable land uses, taking into account expressed public opinion and USACE policies that have evolved to meet day-to-day operational needs.

The USACE intends to continue to lease John Martin Reservoir State Park to CPW. Emphasis will be placed on improving existing facilities as funding permits, including such activities as upgrading aging water and electrical infrastructure, improving energy efficiency and sustainability of facilities, repairing or replacing outdated restrooms, improving and expanding trails, and paving gravel roads in some parks, with limited plans for expansion. The changes required for the Proposed Action were developed to help fulfill regional goals associated with good stewardship of land and water resources that would allow for continued use and development of project lands. Therefore, implementation of the Proposed Action would not result in significant impacts on land uses on project lands.

## 3.2 WATER RESOURCES

### Surface Water

The Arkansas River is the primary tributary to John Martin Reservoir. The river above the dam is 300 miles in length and has a contributing drainage area of 18,130 square miles. Above John Martin Dam, four principal tributaries enter the main stem from the south, which are the St. Charles, Huerfano, Apishapa, and Purgatoire Rivers. Tributaries entering from the north are Fountain River, Chico Creek, and Horse Creek. The Colorado-Kansas state boundary is about 58 river miles below John Martin Dam. Drainage area from John Martin to the state boundary is 6,485 square miles. Along the Arkansas River below John Martin Reservoir, Big Sandy Creek is the principal northside tributary. Tributaries from the south are Caddoa Creek, Rule Creek, Mud Creek, Dry Creek, Willow Creek, Clay Creek and Two Buttes Creek.

The reservoir pool consists of all waters impounded by John Martin Dam. The conservation pool of 330,703 acre-feet is owned by the Arkansas River Compact and its members and is released on their demand through coordination with the Colorado State Engineers office and a locally appointed commissioner. The flood control pool of 269,149 acre-feet is managed by the Reservoir Control Branch, Albuquerque District, U.S. Army Corps of Engineers. The objectives, therefore, are to operate the dam and reservoir as required by the Albuquerque District and the Arkansas River Compact Authority, to monitor water quality, and to maintain a permanent pool if possible.

### Hydrology and Groundwater

The permeable alluvium materials of the Arkansas River Valley in Bent County constitute a valley-fill groundwater aquifer that ranges from 1 to 5 miles wide and up to 60 feet deep. The aquifer is recharged by infiltration of precipitation and applied irrigation water.

The Arkansas River comprises Colorado's largest drainage basin. Originating in the Rocky Mountains in the central portion of the State, the river flows eastward for about 235 miles before entering Kansas. The drainage area above John Martin Dam is 18,130 square miles. Snowmelt in the upper reaches of the basin generally begins in April, with the majority of runoff occurring from May through July.

### Wetlands

Waters of the United States are defined within the Clean Water Act (CWA) and jurisdiction is addressed by the USACE and United States Environmental Protection Agency (USEPA). Wetlands are a subset of the waters of the United States that may be subject to regulation under Section 404 of the CWA (40 CFR 230.3). Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Table 3-1 lists the acreages of various types of wetlands present at John Martin Reservoir. Wetland classifications presented are derived from the National Wetlands Inventory database (USFWS 2017). Figure 3-1 depicts the location of the different wetland types within the John Martin Reservoir project lands boundary.



**Table 3-1. Wetland Resources**

<b>Wetland Types</b>	<b>Total Acres</b>
Wetland associated with lakes (palustrine), either temporary, seasonally, or semi-permanently flooded	1,706.2
Freshwater Emergent Wetland	1,089.6
Freshwater Forested/Shrub Wetland	7,154.7
Freshwater Pond	22.4
Riverine	262.9
<b>Total Acres of Wetlands</b>	<b>10,235.8</b>

Note: Acreages from the USFWS website do not match exactly with the USACE digitized acreages.

## John Martin Reservoir: NWI Mapped Wetlands

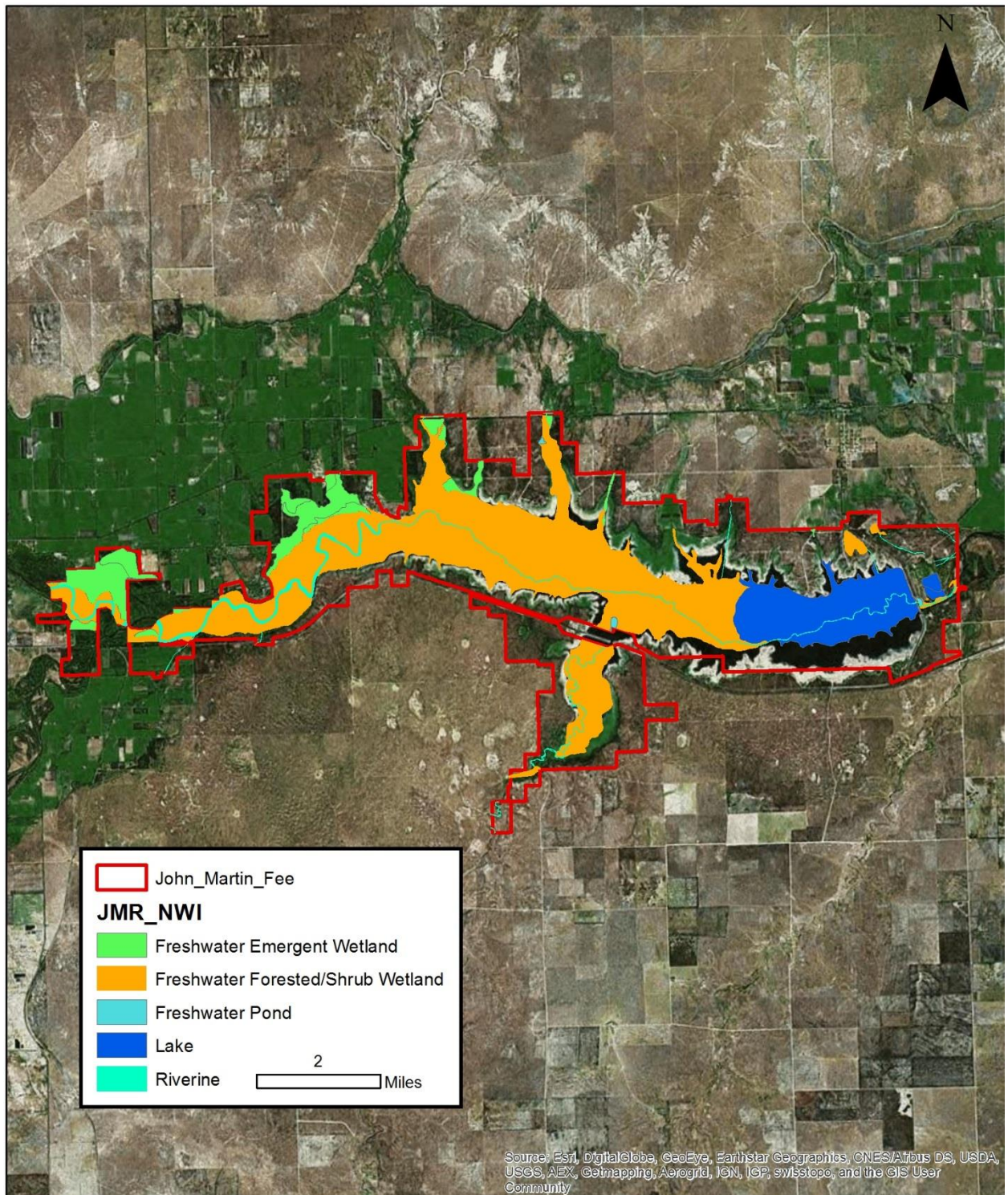


Figure 3-1 Wetland Habitat Types on John Martin Reservoir Project Lands

## Water Quality

The water of the Arkansas River and its tributaries in the headwaters (above Canon City) is generally of excellent chemical quality. Some localized pollution from acid mine drainage occurs in the area of Leadville and is evident in California Gulch (tributary to the Arkansas near Leadville), and in the Arkansas River for a few miles downstream. The mineral quality of the Arkansas River becomes progressively worse downstream to Canon City. This is attributed to accumulation of salts from return flows from irrigated lands and from solids picked up from the soluble rock strata along the tributary streams.

High mineral concentrations are found in the Arkansas River below Nepesta and in all the major tributaries. Locations on the Arkansas River's main stem at Pueblo and above and on the Purgatoire River at Trinidad contain dissolved minerals within the upper limits recommended by the Public Health Service Drinking Water Standards as established by the Colorado Department of Health and Environment.

### **3.2.1 Alternative 1: No Action Alternative**

There would be no impacts on water resources as a result of implementing the No Action Alternative, since there would be no change to the existing MP.

### **3.2.2 Alternative 2: Proposed Action**

The reclassifications and resource management objectives required for the Proposed Action would allow land management and land uses to be compatible with the goals of good stewardship of water resources (e.g., conservation of emergent wetlands, erosion control, and maintaining good water quality); therefore, there would be no significant adverse impacts on water resources.

## **3.3 CLIMATE**

John Martin Reservoir lies in a climate region characterized as semi-arid/continental with low and variable precipitation, low humidity, and a wide seasonal range in temperature. Weather patterns generally are governed by dry air from the southwest; however winter storms emanate from the northwest and moist air from the Gulf of Mexico frequently influence weather during spring, summer, and fall.

During December through February, nighttime temperatures are usually below 32 degrees (°) Fahrenheit (F) while daytime temperatures generally are above freezing. In June through August, the daily maximum temperature is 90° F or higher on about 70 percent of the days. The length of the frost-free growing season in Bent County is approximately 165 days.

Average annual precipitation at Las Animas (the weather station closest to John Martin Dam) is roughly 16 inches, with the highest rainfall typically occurring from May through August. The average annual snowfall is approximately 19 inches and is an insignificant source of moisture.

The NRCS monitors snowpack and other climactic conditions and provides the data to others. NRCS disseminates data, forecasts and products. Products include snowpack summaries, reports, maps, and data tables. They issue monthly water supply forecasts for the river systems from January until June. In 2017, the Arkansas Basin snowmelt runoff was above average throughout the entire basin. As of May 1st, the basin wide snowpack was above average, at 115% of the median, with the Upper Arkansas Basin reporting 130% of median. At John Martin Dam, maximum inflow was

6,068 cfs on 16 May 2017, storage peaked at 265,939 acre-feet (3,845 ft) on 27 June, and the maximum release was about 1478.0 cfs on 16 June.

### **3.3.1 Alternative 1: No Action Alternative**

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions. There would be no short- or long-term, minor, moderate or major, beneficial, or adverse impacts on climate as a result of implementing the No Action Alternative.

### **3.3.2 Alternative 2: Proposed Action**

Revision of the John Martin Reservoir MP would have no impact on the climate of the study area.

## **3.4 CLIMATE CHANGE AND GREENHOUSE GASES**

Federal guidance and direction regarding climate change evaluation is currently in flux. Several EOs have been issued in recent years that direct federal agencies to address climate change and Green House Gas (GHG) emissions with emission reductions and preparedness planning and implementation. President Obama issued EO 13653, Preparing the U.S. for the Impacts of Climate Change in 2013, which was rescinded by President Trump's EO 13783, Promoting Energy Independence and Economic Growth in 2017. EO 13693, Planning for Federal Sustainability in the Next Decade (2015) requires federal agencies to meet emission-reducing goals associated with energy use, water use, building design and utilization, fleet vehicles, and procurement and acquisition decisions.

Federal agencies are required to consider GHG emissions and climate change in environmental assessment in accordance with NEPA. On August 1, 2016, the CEQ issued final guidance on the consideration of GHG emissions and climate change in NEPA review, however, EO 13783 directed the CEQ to rescind that guidance. At the same time, case law in the Ninth Circuit still requires climate change analysis: "The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct" (Center for Biological Diversity v. National Highway Traffic Safety Administration, 538 F.3d 1172, 1217 [9<sup>th</sup> Cir. 2008]). Consistent with case law, an analysis of climate change impacts was conducted for this EA.

According to the most recent estimating tools from the USEPA, there are no GHG contributors within Bent County. The general operations and recreation facilities associated with John Martin Reservoir do not generate significant amounts of GHG emissions. The John Martin Reservoir Project Office has management plans in place such as routine equipment maintenance, holistic vegetative management plans, natural resource management plans, and public education and outreach programs to protect regional natural resources. In addition, the John Martin Reservoir Project Office will continue monitoring programs as required to meet applicable laws and policies.

As a state resource agency, CPW also considers potential GHG emissions in the management of state wildlife resources and the state parks system in their short-term routine maintenance, and long-term natural resource management plans and public education activities in order to "inspire current and future generations to serve as active stewards of Colorado's natural resources", as stated in the CPW mission statement.

Two Executive Orders (EOs), EO 13514 and EO 13693, as well as the President's Climate Action Plan (CAP) set forth requirements to be met by federal agencies. These requirements range from preparing general preparedness plans to meeting specific goals to conserve energy and reduce GHG emissions. In response to the EOs and CAP, the USACE prepared an Adaptation Plan, which is still in effect. The Adaptation Plan includes the following USACE policy statement:

*"It is the policy of USACE to integrate climate change preparedness and resilience planning and actions in all activities for the purpose of enhancing the resilience of our built and natural water-resource infrastructure and the effectiveness of our military support mission, and to reduce the potential vulnerabilities of that infrastructure and those missions to the effects of climate change and variability."*

The USACE manages project lands and recreational programs to advance broad national climate change goals including, but not limited to, climate change resilience and carbon sequestration, as set forth in EO 13693 and related USACE policy.

In addition to its function of flood risk management, the lands surrounding John Martin Reservoir help build resilience and reduce vulnerabilities associated with climate change. The vegetation and tree canopy reduces stormwater runoff, holds the soils, mitigates carbon dioxide emissions, and moderates temperatures, all which are effects of climate change.

#### **3.4.1 Alternative 1: No Action Alternative**

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions. There would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on climate change or contributions to GHG emissions as a result of implementing the No Action Alternative.

#### **3.4.2 Alternative 2: Proposed Action**

Under the Proposed Action, current John Martin Reservoir project management plans and monitoring programs would not be changed. There would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on climate change or contributions to GHG emissions as a result of the updated 2018 MP. In the event that GHG emission issues become significant enough to impact the current operations at John Martin Reservoir, the 2018 MP and all associated documents would be reviewed and revised as necessary.

### **3.5 AIR QUALITY**

Southeastern Colorado and John Martin Reservoir are in Colorado's Eastern High Plains Region for air quality monitoring. Bent County is considered to be "in attainment" (i.e., it does not exceed State or Federal Environmental Protection Agency air quality standards) for all criteria pollutants (carbon monoxide [CO], sulfur dioxide [SO<sub>2</sub>], nitrogen dioxide [NO<sub>2</sub>], lead [Pb], ozone [O<sub>3</sub>], and particulate matter [PM<sub>10</sub> and PM<sub>2.5</sub>]). Ambient air quality in the Arkansas River Valley is generally good except during times of high wind. Moderate and periodic high concentrations of particulate matter, specifically fugitive dust, result from a combination of high winds, highly erodible soils, agricultural land use, and dry (drought) conditions. The Lamar air monitor station, the closest station to the John Martin Reservoir project, has recorded three exceedances for fine particulate matter since 1992; however, these exceedances have all been



associated with prolonged periods of drought and winds from the north and west with hourly wind averages greater than 30 miles per hour. Therefore, the exceedances have been treated as uncontrollable natural events.

### **3.5.1 Alternative 1: No Action Alternative**

There would be no short- or long-term, minor, moderate or major, beneficial, or adverse impacts on air quality as a result of implementing the No Action Alternative, since there would be no change to the existing MP.

### **3.5.2 Alternative 2: Proposed Action**

Existing operation and management of John Martin Reservoir is compliant with the Clean Air Act and would not change with implementation of the 2018 MP. No short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on air quality would occur as a result of implementing the proposed revisions to the John Martin Reservoir MP.

## **3.6 TOPOGRAPHY, GEOLOGY, AND SOILS**

### Topography

The ground elevation on the John Martin Reservoir project ranges from 3,740 feet NVGD29 to 3,930 feet NVGD29 affording a total relief of 190 feet. The higher elevations are gravelly remnants of ancient river terraces or exposed sections of Dakota Sandstone. The intervening elevations are mainly gentle slopes toward the river bottom and the channel proper. The stabilized sandhills to the south are somewhat rolling in character and broken by sandstone outcroppings. On the north, sandstone exposures are more diversified, and sharply defined drainage patterns add some angular character to the surface. Some clay loam soils in this section are suitable for plow agriculture, and alfalfa, small grain and row crops are successfully raised under irrigation.

### Geology

The John Martin Reservoir area is within the Piedmont region of the Great Plains physiographic province and is characterized by flat to gently rolling uplands with a few shallow valleys and many shallow, undrained depressions.

Bedrock near John Martin Reservoir consists of Cretaceous sandstone, shales, and limestones. Most of the dam site is within the Lower Cretaceous Dakota formation, composed of medium-grained sandstones interbedded with shaly and silty sandstone, sandy and silty shales, and shales. Graneros shale, an Upper Cretaceous sandy shale member of the Benton formation, also underlies part of the north wing of the dam.

The Bent County reach of the Arkansas River is underlain by saturated valley-filled alluvium consisting of gravel, sand, silt, and clay of Pleistocene to Holocene age. The alluvium occupies a trough in the sedimentary bedrock.

### Soils

The most productive soils at John Martin Reservoir occupy the north shore spanning the entire length of the project. These soils of the Rocky Ford-Numa Association are deep, well drained, nearly level to gently sloping clay loams on terraces and uplands. Below the dam and in the upper valleys on the western-most portion of the project, Las Apishapa-Bankard Association soils predominate with deep, nearly level loams and clay loams on the flood plains and low terraces. The soils on the south shore

from Rural Creek to the east boundary of the project are classified in the Tivole Association. These soils are deep, gentle rolling, hilly sands rising into hummocky uplands.

Prime Farmlands do occur within the John Martin Reservoir project. Detailed information on all soil types surrounding John Martin Reservoir is available on websites maintained by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS).

Sedimentation surveys for John Martin Reservoir have been conducted periodically over the years and, most recently in 2009. Based on information obtained from the January 2009 hydrographic and August 2009 aerial surveys, roughly 3,600 acre-feet of sediment has been deposited in John Martin Reservoir since May 1999. The total sediment deposition in the reservoir is 101,923 acre-feet as of August 2009. The average annual deposition rate for the 10 years of operation from May 1999 to August 2009 is 354 acre-feet per year. It should be noted that in determining the total capacity loss between surveys, no loss or gain was assumed between elevations 3,855.0 feet NGVD29 and 3,880.0 feet NGVD29 other than what was observed at elevation 3,855.0. Therefore, the incremental reservoir areas and the subsequent capacities above elevation 3,855.0 feet NVGD have been carried over from the 1999 analysis.

These surveys estimate an approximate loss of 40% (approximately 10,800 acre-feet) of storage below the top of the conservation pool in the 50 years between the time of construction and 2010. Most recently, approximately 13% of original storage in this zone was lost in the 15 years between 1995 and 2010, for an annual rate of loss of approximately 0.9% over that period. To date, sediment accumulation in the conservation pool has not severely impacted authorized project purposes and, as is the case for nearly all federal reservoirs, there are no plans to dredge all or portions of John Martin Reservoir.

A bathymetric survey for John Martin Reservoir was started on 28 November 2017. The data will be finalized and a new Area-Capacity curve will be developed in 2018. The purpose of the survey is to measure the accumulated sediment in the lake since the last survey completed in 2009, and to better calculate water storage accordingly.

### **3.6.1 Alternative 1: No Action Alternative**

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions, so there would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on topography, geology, soils, or sedimentation as a result of implementing the No Action Alternative.

### **3.6.2 Alternative 2: Proposed Action**

Topography, geology, and soils were considered during the refining process of land reclassifications for the 2018 MP, but none of the land classification changes of the Proposed Action would have any short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on topography, geology, or soils as a result of implementing the 2018 MP.



### 3.7 NATURAL RESOURCES

#### Vegetation

The John Martin Reservoir lies within the Southwestern Tablelands ecoregion, which is transitional between the Southern Rocky Mountain and Western High Plains ecoregions. The native plant community outside the Arkansas River flood plain is comprised of short, prairie grasses that are utilized primarily as rangeland for grazing livestock, although there is also a significant amount of dryland farming. Common species include blue grama (*Bouteloua gracilis*), side-oats grama (*Bouteloua curtipendula*), buffalo grass (*Bouteloua dactyloides*), galleta (*Hilaria*), alkali sacaton (*Sporobolus airoides*), sand dropseed (*Sporobolus cryptandrus*), western wheatgrass (*Pascopyrum smithii*), and three-awn (*Aristida purpurea*).

Throughout the lower Arkansas River Valley and below the irrigation canals, agricultural land predominates, often directly abutting the restricted riparian corridor and river channel, although much of the irrigated cropland north of John Martin Reservoir has been abandoned.

Historically, riparian vegetation along the Arkansas River consisted of plains cottonwood (*Populus deltoids*), sandbar willow (*Salix exigua*) and, less extensively, peach-leaf willow (*Salix amygdaloides*). The cottonwoods, some of which grew to great sizes, generally colonized in dispersed groves on islands in the river and along the banks, and lacked a shrub understory. The area was used extensively by Native Americans, particularly in winter, and by travelers on the Santa Fe Trail.

#### Fisheries and Wildlife Resources

John Martin Reservoir provides habitat for an abundance of fish and wildlife species. The lake provides a quality fishery, as well as quality wildlife habitat on public land associated with the project.

The fishery at John Martin Reservoir continues to be one of the most important along the lower Arkansas River Valley, particularly with the loss of other large reservoirs due to continued drought conditions. The reservoir provides habitat for an abundance of fish species, with fishing opportunities for both boaters and bank anglers alike. Native species of fish that are prominent to John Martin Reservoir are black bullhead (*Ameiurus melas*), channel catfish (*Ictalurus punctatus*), fathead minnow (*Pimephales promelas*), green sunfish (*Lepomis cyanellus*), orange spotted sunfish (*Lepomis humilis*), plains killifish (*Fundulus zebrinus*), red shiner (*Cyprinella lutrensis*), and white sucker (*Catostomus commersonii*). Stocked fish species include black crappie (*Pomoxis nigromaculatus*), blue catfish (*Ictalurus furcatus*), channel catfish (*Ictalurus punctatus*), flathead catfish (*Pylodictis olivaris*), largemouth bass (*Micropterus salmoides*), sauger (*Sander canadensis*), saugeye (*Sander vitreus X Sander canadensis*), smallmouth bass (*Micropterus dolomieu*), striped bass (*Morone saxatilis*), walleye (*Stizostedion vitreum*), and wiper (*Morone saxatilis X Morone chrysops*). Brush piles consisting of juniper pine and large tamarisks are dropped yearly in John Martin Reservoir to entice healthy reproduction rates as well as survival rates among more structure oriented species such as black and white crappie, largemouth bass, smallmouth bass, and bluegill. Lake Hasty contains rainbow trout (*Oncorhynchus mykiss*), walleye, channel catfish, largemouth bass and bluegill.

John Martin Reservoir provides habitat for a wide variety of game and non-game species of fish and wildlife, including migratory game birds, song birds, wading birds,

reptiles, amphibians, and insects. Typical wildlife at John Martin Reservoir includes small mammals such as bats (*Chiropter sp.*), squirrels (*Sciuridae sp.*), mice (*Mus sp.*), gophers (*Geomyidae sp.*), rats (*Rattus sp.*), rabbits, badgers (*Taxideinae sp.*), raccoons (*Procyon lotor*), foxes (*Canidae sp.*), long-tailed weasels (*Mustela frenata*), and skunks (*Mephitidae sp.*). Other mammals include coyote (*Canis latrans*), bobcat (*Lynx rufus*), and large mammals such as white-tail (*Odocoileus virginianus*) and mule deer (*Odocoileus hemionus*). Resident and migratory songbirds include species such as western meadowlark (*Sturnella neglecta*), mourning dove (*Zenaida macroura*), scaled quail (*Callipepla squamata*), common raven (*Corvus corax*), turkey vulture (*Cathartes aura*), great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), snow (*Chen caerulescens*) and Canada geese (*Branta Canadensis*), and a variety of ducks, gulls, and shorebirds. Reptiles and amphibians include tiger salamander (*Ambystoma tigrinum*), western spadefoot toad (*Spea hammondi*), Great Plains toad (*Anaxyrus cognatus*), bullfrog (*Lithobates catesbeianus*), ornate box turtle (*Terrapene ornate ornate*), short horned lizard (*Phrybisina hernandesii*), western collared lizard (*Crotaphytus collaris*), western garter snake (*Chordata sp.*), western hognose snake (*Teterodon nasicus*), and prairie rattlesnake (*Crotalus viridis*). In all, the area is home to approximately 35 species of mammals, 180 species of birds, and 30 species of amphibians and reptiles.

John Martin Reservoir State Wildlife Area (SWA) is managed to provide production and harvest for game species including: whitetail deer, mule deer, ducks, geese, ring neck pheasants, bobwhite quail, scaled quail, mourning dove, turkey (*Meleagris sp.*), rabbit, and warm water fishes. The management effort specific to John Martin SWA in regards to game species is the implementation of a waterfowl resting area from November first through the end of the regular waterfowl season each year (roughly mid-February). This provides an area along the shoreline and part of the surface area on the reservoir that is closed to all public access. There is a remote boat ramp in the SWA lands on the north shoreline of the reservoir.

John Martin Reservoir SWA and surrounding Bent County is one of the premier birding locations in the interior United States, and is recognized nationally as an "Important Bird Area." The great majority of birds in Bent County are found within the boundaries of John Martin Reservoir. A checklist of birds that can be seen at John Martin Reservoir can be found through CPW's website.

### **3.7.1 Alternative 1: No Action Alternative**

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions; therefore, no short- or long-term, major, moderate, or minor, beneficial, or adverse impacts on natural resources would be anticipated as a result of implementing the No Action Alternative.

### **3.7.2 Alternative 2: Proposed Action**

The reclassifications, resource management objectives, and resource plan required for the Proposed Action would allow land management and land uses to be compatible with the goals of good stewardship of natural resources. The Proposed Action would allow project lands to continue supporting the USFWS and the CPW missions associated with wildlife conservation and implementation of operational practices that would protect and enhance wildlife and fishery populations and habitat. The addition of ESA and MRML- WM lands protects natural resources from various types of adverse impacts such as habitat fragmentation. In addition, the Proposed

Action would be compatible with conservation principles and measures to protect migratory birds as mandated by EO 13186.

The reclassifications proposed in the 2018 MP includes an additional 356 acres as MRML – WM and 227 acres as ESA. Under these reclassifications land parcels previously classified as Recreation Areas or Wildlife Management were converted to either WM or ESA. A WM designation protects natural resources from various types of adverse impacts such as habitat fragmentation and the reclassification of WM lands to ESA was done to further protect areas of extremely high ecological value for the protection of important habitat, to protect unique views, cultural resources and archeological sites. The designation also ensures those areas are given the highest order of protection among the possible land classifications. The reclassification of areas to WM will have minimal effect on current or projected public use, while the reclassification of areas to ESA may require a change in management for the designated areas and could have an effect on current or projected public use. Continued coordination between USACE, USFWS, and CPW would identify appropriate recreation activities and conservation measures consistent with the ESA classification. Current management activities that may be expanded include placement of additional buoys to restrict boating access near nesting sites and new or increased restrictions on public vehicular access near nesting sites. Similar efforts have been used in the past under the cooperative efforts of CPW, USACE, and USFWS. Overall, long-term, beneficial impacts for natural resources would occur as a result of implementing the reclassifications outlined in the 2018 MP.

### **3.8 THREATENED AND ENDANGERED (T&E) SPECIES**

The Endangered Species Act was enacted to provide a program for the preservation of endangered and threatened species and to provide protection for the ecosystems upon which these species depend for their survival. All Federal agencies are required to implement protective measures for designated species and to use their authorities to further the purposes of the Endangered Species Act. The Secretary of the Interior and the Secretary of Commerce (marine species) are responsible for the identification of threatened or endangered species and development of any potential recovery plans.

USFWS is the primary agency responsible for implementing the Endangered Species Act, and is responsible for birds and other terrestrial and freshwater species. USFWS responsibilities under the Endangered Species Act include: 1) the identification of threatened and endangered species; 2) the identification of critical habitats for listed species; 3) implementation of research on, and recovery efforts for, these species; and 4) consultation with other Federal and applicable state agencies concerning measures to avoid harm to listed species.

An endangered species is a species officially recognized by USFWS as being in danger of extinction throughout all or a significant portion of its range. A threatened species is a species likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Proposed species are those that have been formally submitted to Congress for official listing as threatened or endangered. Species may be considered eligible for listing as endangered or threatened when any of the five following criteria occur: 1) current/imminent destruction, modification, or curtailment of their habitat or range; 2) overuse of the species for commercial,

recreational, scientific, or educational purposes; 3) disease or predation; 4) inadequacy of existing regulatory mechanisms; and 5) other natural or human-induced factors affecting their continued existence.

In addition, USFWS has identified species that are candidates for listing as a result of identified threats to their continued existence. The candidate designation includes those species for which USFWS has sufficient information to support proposals to list as endangered or threatened under the Endangered Species Act; however, proposed rules have not yet been issued because such actions are precluded at present by other listing activities. Although not afforded protection by the Endangered Species Act, candidate species may be protected under other Federal or state laws.

According to the Trust Resources Report (Consultation Code: 06E24000-2018-SLI-0045) generated by the USFWS web-based Information for Planning and Conservation tool (IPAC), there are two Federally-listed species, two candidate species, and two formerly listed species in recovery that could be found at John Martin Reservoir (USFWS 2018). A list of these species is presented in Table 3-2. No Critical Habitat has been designated within or near John Martin Reservoir.

**Table 3-2. Federally- and State-Listed Endangered and Threatened Species with Potential to Occur at John Martin Reservoir**

Common Name	Scientific Name	Federal Status	State Status
<b>Birds</b>			
Piping Plover	<i>Charadrius melodus</i>	Threatened	Threatened
Least Tern	<i>Sterna antillarum</i>	Endangered	Endangered
Bald Eagle	<i>Haliaeetus leucocephalus</i>	In recovery	Special Concern
American peregrine falcon	<i>Falco peregrinus anatum</i>	In recovery	Special Concern
Lesser-prairie chicken	<i>Tympanuchus pallidicinctus</i>	Under review	Threatened
<b>Reptiles</b>			
Desert massasauga	<i>Sistrurus catenatus ssp. Edwardsii</i>	Under review	Special Concern

Source: USFWS IPaC for Bent County, Colorado 2018

Bent County is home to several federally- and state-listed threatened or endangered species. While some of them have the potential to occur within federal property, very few are encountered at John Martin Reservoir. Three species that do exist at John Martin Reservoir and are subject to special consideration and protection are the Bald Eagle, the endangered Interior Least Tern and threatened Piping Plover. The Least Tern and the Piping Plover both are known to nest along the sandy shores of the Reservoir.

In addition to the federally-listed species for John Martin Reservoir, CPW maintains lists by Tier and taxonomic group for Species of Greatest Conservation Need and associated general habitat requirements for each species. The list for the Colorado Piedmont Ecoregion is available in Appendix C of the 2018 MP. Many of the species on the list, particularly migratory songbirds, are known to utilize habitat at John Martin Reservoir on a regular basis and are considered in management plans.

### **3.8.1 Alternative 1: No Action Alternative**

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions; therefore, no short- or long-term, major, moderate, or

minor, beneficial, or adverse impacts to threatened and endangered species would be anticipated as a result of implementing the No Action Alternative.

### 3.8.2 Alternative 2: Proposed Action

Under the Proposed Action, the USACE would continue cooperative management plans with the USFWS and CPW to preserve, enhance, and protect wildlife habitat resources. To further management opportunities and beneficially impact habitat diversity, the reclassifications proposed in the 2018 MP include 227 acres as ESA and an additional 356 acres as WM. Under this reclassification, certain land parcels that were previously classified as WM were converted to ESA in order to recognize those areas having the highest ecological value for: 1) protection of important habitat for the endangered Interior Least Tern and the threatened Piping Plover as designated by USFWS, 2) to protect unique views, and cultural and archeological sites, and 3) to ensure they are given the highest order of protection among possible land classifications. Long-term, beneficial impacts for T&E species are anticipated as a result of implementing the reclassifications outlined in the 2018 MP. As noted in Sections 5.5 and 5.6.2 of the 2018 MP, the classifications of Wildlife Management and ESA prioritize resource protection. Areas reclassified as ESA, may require management changes or expansion of current conservation measures, such as limiting public access to nesting areas, with corresponding impacts to public use in these relatively small areas. Any changes regarding the protection of natural resources would be coordinated between USACE and CPW. Any future activities that could potentially result in adverse impacts on Federally-listed species will be coordinated with USFWS through Section 7 of the Endangered Species Act.

### 3.9 INVASIVE SPECIES

Invasive species are any kind of living organism that, if uncontrolled, causes harm to the environment, economy, or human health. Invasive species generally grow and reproduce quickly and spread aggressively. Non-native (exotic) species have been introduced, either intentionally or unintentionally, and can out-compete native species for resources or otherwise alter the ecosystem. Native invasive species are those species that spread aggressively due to an alteration in the ecosystem, such as lack of fire or the removal of a predator from the food chain. Table 3-3 includes a list of invasive species at John Martin Reservoir.

**Table 3-3. Invasive Species Found at John Martin Reservoir**

Common Name	Scientific Name	Native/Non-native	Acres Impacted
<b>Fish</b>			
Common carp	<i>Cyprinus carpio</i>	Non-native	15
<b>Plants</b>			
Kochia	<i>Kochia scoparia</i>	Non-native	1,500
Russian thistle	<i>Salsola Longifolia.</i>	Non-native	10,000
Tamarix	<i>Tamarix chinensis</i>	Non-native	1,400
Small flower tamarix	<i>Tamarix parviflora</i>	Non-native	1,500
Russian olive	<i>Elaeagnus angustifolia</i>	Non-native	600
Canada thistle	<i>Cirsium arvense</i>	Non-native	5,000

Source: USACE OMBIL Report 2016

The common carp is native to Europe and Asia and was brought to the U.S. in 1831. In the late 19<sup>th</sup> century they were widely distributed throughout the country by the government as a food-fish, but they are no longer prized as such. Their introduction has been shown to have negative environmental consequences, since in the absence of natural predators or commercial fishing, they often extensively alter their environments due to their reproductive rate and their feeding habitat of grubbing through bottom sediments for food. In feeding they may destroy, uproot, disturb, and eat submerged vegetation causing serious damage to native duck and fish populations and food sources.

Kochia and Russian thistle are troublesome annual weeds of rangelands, pastures, fields, disturbed areas, roadsides, ditchbanks, and small acreages. Kochia, a native of Asia, was introduced from Europe. Russian thistle originated in Russia and was brought to the U.S. in the late 1800's as a contaminant of North Dakota flaxseed. Kochia is found in all western states except Alaska. Russian thistle is found in every state in the U.S., except Alaska and Florida. Nitrate, oxalate, sulfates, saponins, and alkaloids are found in kochia at levels that can cause poisoning in cattle and sheep.

While it can be used as forage in some areas, other forage species should also be available to avoid the possibility of livestock poisoning. The likelihood of poisoning increases as the plant matures or when drought stressed. Russian thistle can accumulate toxic levels of nitrates, which can cause acute respiratory difficulty and sudden death in cattle and sheep. Russian thistle contains oxalates, which may result in kidney failure in cattle and sheep, if ingested. Both plants reproduce only from seed; therefore, preventing seed-set is important for successful management.

Tamarix (salt cedar) is composed of about 50-60 species of flowering plants, native to dryer areas of Eurasia and Africa. Tamarix was introduced to the U.S. as an ornamental shrub, a windbreak, and a shade tree in the early 19<sup>th</sup> century. In the 1930s, during the Great Depression, tree-planting, including tamarix, was used as a tool to fight soil erosion on the Great Plains, and the trees were planted by the millions in the Great Plains Shelterbelt. Tamarix species are commonly believed to disrupt the structure and stability of North American plant communities and degrade wildlife habitat by outcompeting and replacing native plant species, salinizing soils, monopolizing limited resources of moisture, and increasing the frequency, intensity, and effect of fires and floods. While individual plants may not consume larger quantities of water than native species, large dense stands of tamarix do consume more water than equivalent stands of native cottonwoods. Dealing with invasive populations of tamarix can be done in several ways, including physically removing the plants, spraying them with herbicides, and introducing northern tamarisk beetles (*Diorhabda carinulata*).

Russian olive is a native to western and central Asia, Afghanistan, from southern Russia and Kazakhstan to Turkey and Iran. The species was introduced into North America in the late 19<sup>th</sup> century, and subsequently escaped cultivation because its fruits are relished by birds, which disperse the seeds. Russian olive is considered to be an invasive species in many places in the U.S. because it thrives on poor soil, has low seedling mortality rates, matures in a few years, and outcompetes wild native vegetation. It often invades riparian habitats where overstory cottonwoods have died.

Canadian thistle is a species of flowering plant in the daisy family (Asteraceae) that is native throughout Europe and northern Asia, and has been widely introduced

elsewhere, generally as a contaminant in cereal crop seeds. Control methods include cutting at flower stem extension before flower buds open to prevent seed spread and applying herbicide.

In addition to the above species, there are a number of other potential invasive species of concern identified by USACE staff and CPW. These include the zebra and quagga mussels and the white-nose syndrome affecting bats. Monitoring for these threats is a cooperative effort between CPW and USACE. An Invasive Species Plan is currently being drafted by USACE and is expected to be completed in 2019.

According to the Natural Resource Management objectives in Chapter 3 of the MP, USACE (in coordination with CPW) will monitor the lands and waters at John Martin Reservoir for invasive, non-native and aggressively spreading native species. USACE and CPW will take action to prevent and/or reduce the spread of those species along with implementing management tools to control the spread of noxious plants and promote the vigor of native plant species as funding allows.

### **3.9.1 Alternative 1: No Action Alternative**

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions, so John Martin Reservoir would continue to be managed according to the invasive species management practices. There would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts from invasive species as a result of implementing the No Action Alternative.

### **3.9.2 Alternative 2: Proposed Action**

The land reclassifications, resource objectives, and resource plan required to revise the John Martin Reservoir MP are compatible with the lake's invasive species management practices. Therefore, invasive species would continue to be managed, and no significant adverse impacts on resources would occur as a result of implementing the 2018 MP.

## **3.10 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES**

Please see Section 2.3 of the 2018 MP, which provides a description and analysis of the cultural, historical, and archeological resources found at the John Martin Reservoir.

Cultural resources at John Martin Reservoir represent an important asset that connects past, present and future generations of visitors and residents. Therefore, as funding allows, a Cultural Resources Management Plan (CRMP) shall be developed and incorporated into the Operations Management Plan in accordance with EP 1130-2-540. The purpose of the CRMP is to provide a comprehensive program to direct the historic preservation activities and objectives at John Martin Reservoir. Cultural resource's surveys have been done on some of the locations on project lands. Completion of a full inventory of cultural resources at John Martin Reservoir is a long-term objective that is needed for compliance with Section 110 of the National Historic Preservation Act (NHPA). All currently known and newly recorded sites must be evaluated to determine their eligibility for the National Register of Historical Places (NRHP). Currently, the dam is eligible for the NRHP, but is not being considered for formal listing. In accordance with Section 106 of the NHPA, any proposed ground-disturbing activities or projects, as may be proposed in the future by others for right-of-way easements or trail, roadway, and/or park facilities construction may require cultural



resource surveys to locate and evaluate historic and prehistoric resources. Resources determined eligible for the NRHP must be protected from proposed project impacts, or the impacts must be mitigated. All future cultural resource investigations at John Martin Reservoir must be coordinated with the State Historic Preservation Officer and federally-recognized Tribes to insure compliance with the NHPA, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act.

#### **3.10.1 Alternative 1: No Action Alternative**

There would be no additional short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on cultural, historical, or archaeological resources as a result of implementing the No Action Alternative, as there would be no changes to the existing MP.

#### **3.10.2 Alternative 2: Proposed Action**

Impacts on cultural, historical, and archaeological resources were considered during the refinement processes of land reclassifications. Based on previous surveys at John Martin Reservoir, the required reclassifications, resource objectives, and resource plan would not change current cultural resource management plans or alter areas where these resources exist. All future activities would be coordinated with the State Historic Preservation Officer and Federally-recognized Tribes to ensure compliance with Section 106 of the NHPA, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act. In addition, reclassification of WM areas to ESA would help to further protect high quality and important cultural and archeological resources at John Martin Reservoir. Therefore, no significant adverse impacts on cultural, historical, or archaeological resources would occur as a result of implementing the 2018 MP.

### **3.11 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE**

The zone of influence (ZOI) for the socio-economic analysis of John Martin Reservoir includes Bent County, Colorado in which the lake lies, as well as two cities in neighboring counties, La Junta (Otero County) and Lamar (Prowers County). The population of this one county and two cities in Colorado is referred to as the ZOI for purposes of this MP. Section 2.4 in the 2018 MP for John Martin Reservoir provides detailed discussions regarding the demographics of the ZOI, including population estimates; percent of population by gender; percent of population by age group; population estimates by race; population estimate by highest level of education attainment in population of 25 years of age and older; average annual employment by sector; 2015 labor force; employment and unemployment rates; 2010 households and household size; 2015 median and per capita income; and the percent of families and people whose 2015 income is below the poverty level. The following discussions provides a brief summary of the demographic characteristics for the ZOI around John Martin Reservoir.

#### Demographic Characteristics

Population. The 2000 and 2015 population estimates for the ZOI are 22,435 and 20,657, respectively, indicating that the population in the ZOI is flat to declining. Population projections for the year 2045, show that while Bent County is expected to make a very minor 0.4 percent annual growth, both Otero County, where La Junta is located and Prowers County, in which Lamar is located are expected to have annual

negative growth rates of 0.3 and 0.2 percent, respectively. During the same timeframe, Colorado is projected to increase by an annual rate of 1.5 percent.

Percent of Population by Gender (2015 data). The ZOI, with a 54 percent male and 46 percent female population, has a higher concentration of males when compared to the state of Colorado, which is approximately 50/50 male to female.

Percent of Population by Age Group (2015 data). Bent County has more residents between the ages of 25 and 44 and less under the age of 25 relative to both the ZOI and the state.

Population Estimates by Race (2015 data). The ZOI population is approximately 53 percent White, 40 percent Hispanic or Latino, and 3 percent Black. The other race categories account for less than 2 percent of each of the population. By comparison, the state's population is approximately 69 percent White, 21 percent Hispanic or Latino, 4 percent Black, and 3 percent Asian.

Population Estimate by Highest Level of Education Attainment in Population of 25 Years of Age and Older (2015 data). In the ZOI, 8 percent of the population have less than a 9<sup>th</sup> grade education; another 11 percent have between a 9<sup>th</sup> and 12<sup>th</sup> grade education; 34 percent have a high school diploma or equivalent; another 24 percent have some college and no degree. Eleven percent of the population in the ZOI 25 years of age or older have an Associate's degree; 7 percent have a Bachelor's degree; and 4 percent have a graduate or professional degree. In the state of Colorado, 4 percent of the population have less than a 9<sup>th</sup> grade education; another 5 percent have between a 9<sup>th</sup> and 12<sup>th</sup> grade education; 22 percent have at least a high school diploma or equivalent; 22 percent have some college. Eight percent in the state have an Associate's degree; 24 percent have a Bachelor's degree; and 14 percent have a graduate or professional degree.

Average Annual Employment by Sector (2015 data). In the ZOI, the largest percentage of the population is employed in educational services; health care and social assistance sector, which make up 24 percent. This is followed by 15 percent in Retail Trade; 12 percent in Public Administration; and 10 percent in the arts, entertainment, recreation, accommodations and food services sector. Lastly, 8 percent are employed in transportation, warehousing, and utilities; 6 percent in professional, scientific, management, administrative, and waste management services sector; another 6 percent in Other services, except public administration; and 5 percent each in the construction sector and the agriculture, forestry, fishing, hunting, and mining sector. The remainder of the employment sectors each comprise 5 percent or less of the zone of interest's labor force.

Labor Force, Employment, and Unemployment Rates 2015 Averages. The unemployment rate for ZOI based on 2015 averages shows that Otero County, where La Junta city is located, has the highest unemployment rate of the three counties at 5.8 percent, followed by Prowers County where Lamar is located with an unemployment rate of 4.1 percent. Bent County had the lowest unemployment rate of the three counties in 2015 at 3.9 percent, which was the same rate as the state of Colorado.

Households and Household Size (2010 data). There were approximately 1.97 million households in the state of Colorado with an average household size of 2.49. The

ZOI contained approximately 7,900 of those homes with a smaller average household size: 2.34 for Bent County, 2.33 for La Junta, and 2.43 for Lamar.

2015 Median and Per Capita Income. The median household income in the ZOI is \$31,113 in La Junta; \$35,487 in Lamar, and \$36,791 in Bent County in contrast to the state of Colorado, which has a \$60,629 median income. The per capita income reflects the same significant shortfall within the ZOI. La Junta has a per capita income of \$18,132, Lamar's is \$19,657, and Bent County's is \$13,544 compared to the state with a per capita income of \$32,217.

Percent of Families and People Whose 2015 Income is Below the Poverty Level (2015 data). Within the ZOI, 25.5 percent of the people had incomes that fell below the poverty level in the twelve months of 2015, which is more than double the percentage of people in the state whose incomes fell below the poverty line. In terms of families below the poverty level, all of the areas in the ZOI had a greater percentage of families below the poverty level (La Junta 21.1 percent, Lamar 14.9 percent, and Bent County 20.7 percent) than the state of Colorado (8.5 percent).

### Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued by President Clinton on 11 February 1994. It was intended to ensure that proposed Federal actions do not have disproportionately high and adverse human health and environmental effects on minority and low-income populations and to ensure greater public participation by minority and low-income populations. It required each agency to develop an agency-wide environmental justice strategy. A Presidential Transmittal Memorandum issued with the EO states that "each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the NEPA 42 U.S.C. section 4321, et seq."

EO 12898 does not provide guidelines as to how to determine concentrations of minority or low-income populations. However, analysis of demographic data on race and ethnicity and poverty provides information on minority and low-income populations that could be affected by the proposed actions. The U.S. Census American Community Survey provides the most recent estimates available for race, ethnicity, and poverty. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, Pacific Islander, or Other. Poverty status is used to define low-income. Poverty is defined as the number of people with income below poverty level, which was \$24,250 for a family of four in 2015, according to the U.S. Census Bureau. A potential disproportionate impact may occur when the minority in the study area exceeds 50 percent or when the percent minority and/or low-income in the study area are meaningfully greater than those in the region.

Counties in the ZOI have substantially higher Hispanic or Latino minority populations than the state of Colorado, and slightly lower Black and Asian minority populations, as shown in Table 3-4, La Junta is the only area in the ZOI with a minority population greater than 50 percent. The percentage of the population living in poverty in Bent County and the cities of Lamar and La Junta is significantly greater than in the State of Colorado.

**Table 3-4. Percent Minority and Poverty Populations**

	Minority Population (Percent)	All Ages in Poverty (Percent)
Colorado	31.1	12.7
Bent County	44.2	25.6
La Junta	55.2	31.3
Lamar	40.7	20.3
<b>Zone of Interest Total</b>	<b>46.6</b>	<b>25.5</b>

Sources: U.S. Census Bureau 2015a and 2015c

### Protection of Children

EO 13045 requires each Federal agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children” and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” This EO was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. The potential for impacts on the health and safety of children is greater where projects are located near residential areas. The U.S. Census estimates show that persons under 18 years of age make up roughly 25.7 percent of the population in the ZOI, which is similar to the state’s 26.2 percent for the same age group. The outlier is Bent County whose percentage of population under 18 years of age is 16.39 (U.S. Census Bureau 2015d).

#### **3.11.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, there would be no changes to the existing MP, with the USACE and/or the lessee continuing to manage John Martin Reservoir’s natural resources as set forth in the 1974 MP. There would be no short- or long-term, minor, moderate, or major adverse impacts on socioeconomic resources. Beneficial socioeconomic impacts existing as a result of the implementation of the 1974 MP would continue, as visitors would continue to come to the lake from surrounding areas. In addition to camping in lease-operated campgrounds, many visitors purchase goods such as groceries, fuel, and camping supplies locally, eat in local restaurants, stay in local hotels, and shop in local retail establishments. These activities would continue to bring revenues to local companies, provide jobs for local residents, and generate local and state tax revenues. There would be no disproportionately high or adverse impacts on minority or low-income populations or children with the implementation of the No Action Alternative.

#### **3.11.2 Alternative 2: Proposed Action**

Under the Proposed Action, the land reclassifications, resources objectives, and resource plan reflect changes in land management and land uses that have occurred since 1974. John Martin Reservoir offers a variety of free recreational opportunities for visitors. It is beneficial to the local economy through direct and indirect job creation and local spending by visitors. Beneficial impacts would be similar to the No Action Alternative. There would be no adverse impacts on economy in the area and no disproportionately high or adverse impacts on minority or low-income populations or children as a result of the Proposed Action.

### 3.12 RECREATION

Recreational resources at John Martin Reservoir serve a large population of visitors locally and from the Denver, Colorado Springs, and Pueblo metropolitan areas. The Reservoir's rural location, developed park and extensive wildlife management areas offer visitors a unique wilderness experience on the prairies of eastern Colorado. Other factors that contribute to the importance of John Martin Reservoir as a recreational area include easily accessible boat ramps and uncrowded waters at both Lake Hasty and John Martin Reservoir, plentiful fish and game for outdoor sportsmen, large expanses for wildlife observation, including bald eagles, and the threatened Piping Plover and endangered Interior Least Tern.

The primary area having a significant influence on the public use and management of John Martin Reservoir is Bent County where the reservoir is located. Other significant towns that are relatively near the reservoir are Lamar and La Junta. The majority of visitors to John Martin Reservoir come from within a 100-mile radius of the reservoir, with the most frequent users coming from within a 50-mile radius. Hasty Lake visitation captures a variety of campers, including stop-over campers who utilize the areas as an overnight stop.

All recreational areas and facilities on John Martin Reservoir project lands are operated by the Colorado Division of Parks and Wildlife who lease or license approximately 21,000 acres of land for operation of the John Martin Reservoir State Park and John Martin Reservoir State Wildlife Management Area. Recreational opportunities include but are not limited to the following:

- Hunting – Hunting is popular at the John Martin Reservoir State Wildlife Area. Hunting opportunities include deer, a variety of small game, and waterfowl. Portions of the water surface are closed to public access on a seasonal basis to provide a resting place for waterfowl.
- Fishing - Fishing in John Martin Reservoir and Lake Hasty can be excellent for walleye, saugeye, wiper, large and small mouth bass, crappie, channel catfish and bream. Lake Hasty is also stocked with rainbow and cutthroat trout each spring and fall.
- Water Sports - Water-based outdoor recreation includes all types of water sports, including windsurfing, waterskiing, and use of personal water craft, fishing, boating, swimming, scuba diving, and kayaking. Lake Hasty is only open to small watercraft that do not have gas motors – electric motors are permitted.
- Picnicking - Picnic facilities are available at the Point Overlook and Lake Hasty Recreation Area.
- Camping - Electric and non-electric sites are available at Lake Hasty and Point Overlook Campgrounds.
- Hiking - The Red Shin Hiking Trail is a 4.5 mile trail that starts near the Stilling Basin and offers many nature viewing opportunities in a variety of habitats.
- Wildlife Viewing - The Santa Fe Slough on the east and west sides of the Dam Road provides excellent opportunities to view waterfowl in their natural habitat. The west side of the dam also features a viewing blind.

- Essential Natural Habitat - The sand and gravel shores of John Martin Reservoir are among the few remaining nesting areas in the State of Colorado for the threatened Piping Plover and the endangered Interior Least Tern. These nesting areas, with proper protection and management, provide the public an opportunity to view the Interior Least Tern and Piping Plover, and to understand the ecological importance of the nesting areas.

Visitation at John Martin Reservoir varies considerably from year-to-year. Average visitation from 2013 through September 2016 was 185,000 per year, with the heaviest visitation in June, July, and August. The most common activities that visitors engaged in were trail use and wildlife viewing, fishing, and non-primitive camping. There were no records kept for the number of visitors engaged in hunting. However, the majority of the area is managed for wildlife, so it is assumed that hunting is a major activity at John Martin Reservoir.

Management of the water surface for recreational purposes at John Martin Reservoir rests primarily with the CPW, but close coordination is maintained with the USACE and the Bent County Sheriff's Office with respect to enforcement of rules and regulations that apply to boating.

#### **3.12.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, there would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on recreational resources, as there would be no changes to the existing MP.

#### **3.12.2 Alternative 2: Proposed Action**

John Martin Reservoir is beneficial to the local visitors, offering a variety of free recreation opportunities. While the amount of acreage available for HDR would increase and the amount of acreage available for LDR would be eliminated with implementation of the 2018 MP, these land reclassifications reflect changes in land management and land uses that have occurred since 1974 at John Martin Reservoir. The conversion of these lands would have no effect on current or projected public use. Therefore, no adverse impacts on area recreational resources would result from the revision of the John Martin Reservoir MP.

### **3.13 AESTHETIC RESOURCES**

Sometimes called a sapphire on the plains, John Martin Reservoir is a peaceful paradise in which people play, birds flock, and wildlife roam. The area is unique in the sense that the John Martin Reservoir, occupying land along both sides of the Arkansas River, offers the largest undeveloped expanse of "natural areas" land in southeastern Colorado. The project therefore has preserved the visual qualities of an historic period and the associated open natural landscape of a bygone era.

The terrain in the area north of John Martin Reservoir is characterized by short grass prairie on gravel terraces – i.e., irrigated cropland that has been abandoned and that is now used as dry land pasture, and a few small remaining, irrigated cropland fields. The majority of land upstream of the John Martin dam has been leased for wildlife conservation to the State of Colorado over the last 15 years. Livestock grazing on Project land has not occurred since the wildlife lease was initiated.

The land south and near the reservoir is primarily rolling sand dunes covered with grasses and sagebrush accented with a few bluffs and rock outcroppings near the

reservoir. The area is scenic and the natural shortgrass landscape north of the reservoir is reminiscent of the views of travelers in the 1840's on the Santa Fe Trail. A portion of the Santa Fe National Historic Trail is located on project land on the north side of the reservoir.

#### **3.13.1 Alternative 1: No Action Alternative**

There would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on visual resources as a result of implementing the No Action Alternative, as there would be no changes to the existing MP.

#### **3.13.2 Alternative 2: Proposed Action**

John Martin Reservoir currently plays a pivotal role in providing parks and open space in Bent County. Even though the amount of acreage available for HDR would increase and LDR would be eliminated with implementation of the 2018 MP, these land reclassifications reflect changes in land management and land uses that have occurred since 1974 at John Martin Reservoir. The conversion of these lands would have no effect on current or projected public use or visual aesthetics. Furthermore, the increase in the acreage of land classified as ESA and MRML – WM would protect lands that are aesthetically pleasing at John Martin Reservoir and limit future development. Therefore, no adverse impacts on visual resources would result from implementation of the 2018 MP.

### **3.14 HAZARDOUS MATERIALS AND SOLID WASTE**

This section describes existing conditions within the John Martin Reservoir area with regard to potential environmental contamination and the sources of releases to the environment. Contaminants could enter the John Martin environment via air or water pathways. Highways and roads in the vicinity of the lake could also provide sources of contaminants. There are also public campgrounds and recreation areas/parks around the lake that could contribute small amounts of hazardous materials and waste to the watershed.

Public trash and garbage pickup and disposal is provided for all formal recreational properties around John Martin Reservoir by commercial solid waste removal contractors, but there are locations on the south shore of the reservoir in wildlife management lands where citizens have been parking RVs in significant numbers and thus trash is a significant problem.

#### **3.14.1 Alternative 1: No Action Alternative**

There would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on hazardous, toxic, radioactive, or solid wastes as a result of implementing the No Action Alternative, as there would be no changes to the existing MP.

#### **3.14.2 Alternative 2: Proposed Action**

The land reclassifications required to revise the MP would be compatible with John Martin Reservoir's hazardous and toxic waste and solid waste management practices and would limit access to RVs in wildlife management areas. Therefore, there are expected to be minor to moderate beneficial short- and long-term impacts to hazardous, toxic, radioactive, or solid wastes issues as a result of implementing the 2018 MP.



### 3.15 HEALTH AND SAFETY

As mentioned earlier in this document, John Martin Reservoir's authorized purposes include flood risk management, water conservation storage, fish and wildlife habitat, and recreation. The USACE, with assistance from the CPW, has established public outreach programs to educate the public on water safety and conservation of natural resources. In addition to the water safety outreach programs, the project has established recreation management practices in place to protect the public. These include safe boating and swimming regulations, safe hunting regulations, and speed limit and pedestrian signs for park roads. John Martin Reservoir also has solid waste management plans in place for camping and day use areas. John Martin Reservoir has personnel in place to assist with the enforcement of these policies, rules, and regulations during normal park hours.

#### 3.15.1 Alternative 1: No Action Alternative

Under the No Action Alternative, the 1974 MP would not be revised. No significant adverse impacts on human health or safety would be anticipated.

#### 3.15.2 Alternative 2: Proposed Action

Under the Proposed Action, the proposed revisions to the John Martin Reservoir MP would be compatible with project safety management plans. The revised classifications of Restricted and Designated No-Wake water surface areas would improve boating safety near key recreational water access areas such as boat ramps and swimming areas. The Project would continue to have reporting guidelines in place should water quality become a threat to public health. Existing regulations and safety programs throughout the John Martin Reservoir Project area would continue to be enforced to ensure public safety. There would be no short- or long-term, minor, moderate, or major, adverse impacts on public health and safety as a result of implementing the Proposed Action.

### 3.16 SUMMARY OF CONSEQUENCES AND BENEFITS

Table 3-5 provides a tabular summary of the consequences and benefits for the No Action and Proposed Action alternatives for each of the 15 assessed resource categories.

**Table 3-5. Summary of Consequences and Benefits**

Resource	Change Resulting from Revised Master Plan	Environmental Consequences		Benefits Summary
		No Action Alternative	Proposed Action	
Land Use	No effect on private lands. Emphasis is on protection of wildlife and environmental values on USACE land and maintaining current level of developed	Fails to recognize recreation trends and regional natural resource priorities.	Recognizes recreation trends and regional natural resource priorities identified by USACE, CPW, and public comment.	Land classification changes and new resource objectives fully recognize passive use recreation trends and regional environmental values such as protection of the endangered Interior Least Tern, the threatened Piping Plover and unique

Resource	Change Resulting from Revised Master Plan	Environmental Consequences		Benefits Summary
		No Action Alternative	Proposed Action	
	recreation facilities.			cultural and archeological resources.
Water Resources Including Groundwater, Wetlands, and Water Quality	Small change to recognize value of wetlands.	Fails to recognize the water quality benefits of good land stewardship and need to protect wetlands.	Promotes restoration and protection of wetlands and good land stewardship.	Specific resource objective promotes restoration and protection of wetlands.
Climate	Minor change to recognize need for sustainable, energy efficient design.	Fails to promote sustainable, energy efficient design.	Promotes land management practices and design standards that promote sustainability.	Specific resource objectives promote national climate change resiliency. LEED standards for green design, construction, and operation activities will be employed to the extent practicable.
Climate Change and Greenhouse Gases	Same as for Climate	Same as for Climate	Same as for Climate	Same as for Climate
Air Quality	No change	No effect	No effect	No added benefit
Topography, Geology and Soils	Minor change to place emphasis on good stewardship of land and water resources.	Fails to specifically recognize known and potential soil erosion problems.	Encourages good stewardship that would reduce existing and potential erosion.	Specific resource objectives call for stopping erosion from overuse and land disturbing activities.
Natural Resources	Moderate benefits through land reclassification and resource objectives.	Fails to recognize ESA, and regional priorities calling for protection of wildlife habitat.	Gives full recognition of sensitive resources and regional trends and priorities related to natural resources.	Reclassification of lands included 227 acres of ESA and an increase in lands emphasizing wildlife management.
Threatened and Endangered Species	Minor change to recognize both federal and state-listed species.	Fails to recognize current federal and state-listed species.	Fully recognizes federal and state-listed species as well as SGCN listed by CWP.	The MP sets forth the most recent listing of federal and state-listed species and addresses on-going commitments associated with USFWS Biological

Resource	Change Resulting from Revised Master Plan	Environmental Consequences		Benefits Summary
		No Action Alternative	Proposed Action	
				Opinions. Reclassification of 227 acres of ESA and specific resource objectives were included for resource protection, including threatened and endangered species.
Invasive Species	Minor change to recognize several recent and potentially aggressive invasive species.	Fails to recognize current invasive species and associated problems.	Fully recognizes current species and the need to be vigilant as new species may occur.	Specific resource objectives specify that invasive species shall be monitored and controlled as needed.
Cultural Resources	Minor change to recognize current status of cultural resources.	Included cursory information about cultural resources that is inadequate for future management and protection.	Recognizes the presence of cultural resources and places emphasis on protection and management.	Reclassification of lands included 227 acres of ESA and specific resource objectives were included for protection of T&E species and cultural and archeological resources.
Socioeconomics and Environmental Justice	No change	No effect	No effect	No added benefit
Recreation	Moderate benefits to outdoor recreation programs.	Fails to recognize current outdoor recreation trends.	Fully recognizes current outdoor recreation trends.	Includes specific management objectives focused on outdoor recreation opportunities and trends.
Aesthetics	No change	No effect	No effect	No added benefit
Hazardous, Toxic, and Radioactive Wastes	Minor to moderate benefits to HTRW issues by limiting HDR usage on ESA and WM areas.	Fails to recognize current HTRW problems associated with incompatible recreation use on WM areas.	Fully recognizes compatible use activities and limits those recreational activities that would be detrimental to the designated land use classifications.	Specific management objectives focused on outdoor recreation opportunities and trends that are compatible with the designated land used classifications and limits those that are not.

Resource	Change Resulting from Revised Master Plan	Environmental Consequences		Benefits Summary
		No Action Alternative	Proposed Action	
Health and Safety	Minor change to promote public safety awareness.	Fails to emphasize public safety programs and outreach.	Recognizes the need for public safety programs and outreach.	Includes specific management objectives to increase water safety outreach efforts. Also, classifies 210 acres of water surface as restricted and designated no-wake for public safety purposes.

## SECTION 4: CUMULATIVE IMPACTS

The most severe environmental degradation may not result from the direct effects of any particular action, but from the combination of effects of multiple, independent actions over time. As defined in 40 CFR 1508.7 (CEQ Regulations), a cumulative effect is 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.

By Memorandum dated June 24, 2005, from the Chairman of the CEQ to the Heads of Federal Agencies, entitled "Guidance on the Consideration of Past Actions in Cumulative Effects Analysis", CEQ made clear its interpretation that "...generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions..." and that the "...CEQ regulations do not require agencies to catalogue or exhaustively list and analyze all individual past actions." This cumulative impacts analysis summarizes expected environmental impacts from the combined impacts of past, current, and reasonably foreseeable future activities affecting any part of the human or natural environments impacted by the Proposed Action.

### 4.1 PAST IMPACTS WITHIN THE ZONE OF INTEREST

John Martin Reservoir was originally authorized by the Flood Control Acts of 1936 as amended by the Flood Control Act of 1938. Construction of the reservoir began in 1941 and was completed in 1948. The total project area at John Martin Reservoir encompasses 20,467 acres, which at conservation pool of 3,870 feet NGVD29 includes 10,650 acres of land and 11,355 acres of surface water.

### 4.2 CURRENT AND REASONABLY FORESEEABLE PROJECTS WITHIN AND NEAR THE ZONE OF INTEREST

Future management of the 4,976 acres of flowage easement lands at John Martin Reservoir includes routine inspection of these areas to ensure that the Government's rights specified in the easement deeds are protected. In most cases, the Government acquired the right to prevent placement of fill material or habitable structures on the easement area, which prohibits placement of any structure that may interfere with the USACE flood risk management and water conservation missions.

John Martin Reservoir is located in a very rural portion of the state of Colorado. The total population in the zone of interest, which includes Bent County and the cities of La Junta and Lamar, based on 2015 U.S. Census data is 20,657 with population projected through 2045 expected to drop. As such, no large transportation or business infrastructure projects are expected to be implemented within the area that could be included in the cumulative impacts analysis.

CPW is actively evaluating and considering whether or not current facilities are sufficient for the ever changing recreational uses at John Martin Reservoir. There may be needs for future development to meet the desires of the public and to better manage property and/or natural resources.

### **4.3 ANALYSIS OF CUMULATIVE IMPACTS**

Impacts on each resource were analyzed according to how other actions and projects within the zone of interest might be affected by the No Action Alternative and Proposed Action. Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. For the purpose of this analysis the intensity of impacts will be classified as negligible, minor, moderate, or major. These intensity thresholds were previously defined in Section 3.0. Negative growth and development are expected to continue in the vicinity of John Martin Reservoir and cumulative adverse impacts on resources would not be expected when added to the impacts of activities associated with the Proposed Action or No Action Alternative. A summary of the anticipated cumulative impacts on each resource is presented below.

#### **4.3.1 Land Use**

A major impact would occur if any action is inconsistent with adopted land use plans or if an action would substantially alter those resources required for, supporting, or benefiting the current use. Land use around John Martin Reservoir has experienced little change in the past several years. Under the No Action Alternative, land use would not change. Although the Proposed Action would result in the reclassification of project lands, the reclassifications were developed to help fulfill regional goals associated with good stewardship of land resources that would allow for continued use of project lands. Therefore, cumulative impacts on land use within the area surrounding John Martin Reservoir, when combined with past and proposed actions in the region, are anticipated to be negligible.

#### **4.3.2 Water Resources**

A major impact would occur if any action is inconsistent with adopted water surface classifications or water use plans, or if an action would substantially alter those resources required for, supporting, or benefiting the current use. John Martin Reservoir was developed for flood risk management, water conservation storage, fish and wildlife, and recreation purposes. The reclassifications and resource objectives required to revise the John Martin Reservoir MP are compatible with water use plans and surface water classification; further, they were developed to help fulfill regional goals associated with good stewardship of water resources that would allow for continued use of water resources associated with John Martin Reservoir. Therefore, cumulative impacts on water resources within the area surrounding John Martin Reservoir, when combined with past and proposed actions in the region, are anticipated to be negligible.

### **4.3.3 Climate**

The Proposed Action would neither affect nor be affected by the climate. Therefore, implementation of the revised land use classifications in the 2018 MP, when combined with other existing and proposed projects in the region, would not result in major cumulative impacts on the climate.

### **4.3.4 Climate Change and GHG**

Under the Proposed Action, current John Martin Reservoir project management plans and monitoring programs would not be changed. In the event that GHG emission issues become significant enough to impact the current operations at John Martin Reservoir, the 2018 MP and all associated documents would be reviewed and revised as necessary. Therefore, implementation of the 2018 MP, when combined with other existing and proposed projects in the region, would result in negligible cumulative impacts on climate change or GHG.

### **4.3.5 Air Quality**

No major highway or roadway projects are scheduled near the zone of interest for John Martin Reservoir nor is development of business or industries that might be significant contributors of emissions; which would limit the amount of new emissions that could potentially affect air quality within the region. The Proposed Action would not adversely impact air quality. Vehicle traffic along park and area roadways and routine daily activities in nearby communities contribute to current and future emission sources; however, due to the remote nature of the area, those impacts are negligible. Occasional seasonal prescribed burning could occur on John Martin Reservoir and would have minor, negative impacts on air quality through elevated ground-level O<sub>3</sub> and particulate matter concentrations; however, these seasonal burns would be scheduled so that impacts are minimized. Cumulative air quality impacts associated with implementation of the 2018 MP, when combined with other existing and proposed projects in the region, are anticipated to be negligible.

### **4.3.6 Topography, Geology, and Soils**

A major impact would occur if the action exacerbates or promotes long-term erosion, if the soils are inappropriate for any proposed construction and would create a risk to life or property, or if there would be a substantial reduction in agricultural production or loss of Prime Farmland soils. However, implementation of the Proposed Action would not contribute significantly to cumulative impacts on topography, geology, and soils within the area surrounding John Martin Reservoir, when combined with past and proposed actions in the region.

### **4.3.7 Natural Resources**

By implementing the 2018 MP, the required reclassifications, resource objectives, and resource plan would allow land management and land uses to be compatible with the goals of good stewardship of natural resources. The Proposed Action would allow project lands to continue supporting USFWS and CPW missions associated with wildlife conservation and implementation of operational practices that would protect and enhance wildlife and fishery populations and habitat. In addition, the Proposed Action would be compatible with conservation principles and measures to protect migratory birds as mandated by EO 13186. Long-term, beneficial impacts on natural resources could occur as a result of implementing the reclassifications outlined

in the 2018 MP. Therefore, implementation of the 2018 MP, when combined with other existing and proposed projects in the region, would result in minor to moderate beneficial cumulative impacts on natural resources in the John Martin Reservoir area.

#### **4.3.8 Threatened and Endangered Species**

A major impact on protected species would occur if any action resulted in a jeopardy opinion for any endangered, threatened, or rare species. Under the Proposed Action, the USACE would continue cooperative management plans with USFWS and CPW to preserve, enhance, and protect wildlife habitat resources. To further management opportunities and beneficially impact habitat diversity, the reclassifications, resources objectives, and resource plan proposed in the 2018 MP include 227 acres as ESA and 8,602 acres as MRML- WM lands. Therefore, implementation of the 2018 MP, when combined with other existing and proposed projects in the region, would result in minor to moderate beneficial cumulative impacts on natural resources in the John Martin Reservoir area.

#### **4.3.9 Invasive Species**

USACE, in conjunction with CPW currently implements an Invasive Species Management program and would continue to do so regardless of the Proposed Action. Therefore, implementation of the 2018 MP, when combined with other existing and proposed projects in the region, would not result in adverse cumulative impacts on native species as a result of invasive species control efforts. In fact, beneficial cumulative impacts would occur on native species through implementation of the 2018 MP and other programs within the region supported by agencies such as CPW and USFWS.

#### **4.3.10 Cultural, Historical, and Archaeological Resources**

The Proposed Action would not affect cultural resources or historic properties. Therefore, this action, when combined with other existing and proposed projects in the region, would not result in major cumulative impacts on cultural resources or historic properties.

#### **4.3.11 Socioeconomics and Environmental Justice**

The Proposed Action would not result in the displacement of persons (minority, low-income, children, or otherwise) as a result of implementing the reclassifications, resources objectives, and resource plan proposed in the 2018 MP. Therefore, the effects of the Proposed Action on environmental justice and the protection of children, when combined with other ongoing and proposed projects in the John Martin Reservoir area, would not be considered a major cumulative effect.

#### **4.3.12 Recreation**

John Martin Reservoir provides regionally significant outdoor recreation benefits including a variety of free recreation opportunities. Even though the amount of acreage available for HDR would increase and LDR would be eliminated as a result of implementing the reclassifications, resources objectives, and resource plan proposed in the 2018 MP, these changes reflect changes in land management and historic recreation use patterns that have occurred since 1974 at John Martin Reservoir. The conversion of these lands would have no effect on current or projected public use. Therefore, the Proposed Action, when combined with other existing and proposed

projects in the region, would result in negligible beneficial cumulative impacts on area recreational resources.

#### **4.3.13 Aesthetic Resources**

No impacts on visual resources would occur as a result of implementing the reclassifications, resources objectives, and resource plan proposed in the 2018 MP. The Proposed Action, in conjunction with any other projects in the region, would result in minor beneficial cumulative impacts on the visual resources in the John Martin Reservoir area.

#### **4.3.14 Hazardous Materials and Solid Waste**

No hazardous material or solid waste concerns would be expected with implementation of the 2018 MP; therefore, when combined with other ongoing and proposed projects in the John Martin Reservoir area, there would be no cumulative effects on hazardous materials and solid waste.

#### **4.3.12 Health and Safety**

No health or safety risks would be created by the Proposed Action. The effects of implementing the 2018 MP, when combined with other ongoing and proposed projects in the John Martin Reservoir area, would not be considered a major cumulative effect.

### **SECTION 5: COMPLIANCE WITH ENVIRONMENTAL LAWS**

This EA has been prepared to satisfy the requirements of all applicable environmental laws and regulations, and has been prepared in accordance with the CEQ's implementing regulations for NEPA, 40 CFR Parts 1500 – 1508, and the USACE ER 200-2-2, *Environmental Quality: Procedures for Implementing NEPA*. The revision of the 2018 MP is consistent with the USACE's Environmental Operating Principles. The following is a list of applicable environmental laws and regulations that were considered in the planning of this project and the status of compliance with each:

Fish and Wildlife Coordination Act of 1958, as amended – The USACE initiated public involvement and agency scoping activities to solicit input on the 2018 MP revision process, as well as identify reclassification proposals, and identify significant issues related to the Proposed Action. Information provided by USFWS and CPW on fish and wildlife resources has been utilized in the development of the 2018 MP.

Endangered Species Act of 1973, as amended – Current lists of threatened or endangered species were compiled for the revision of the 1974 MP. There would be no adverse impacts on threatened or endangered species resulting from the implementation of the 2018 MP; however, beneficial impacts, such as acres being added for habitat and cultural resources protection and fish and wildlife management, would occur.

Executive Order 13186 (Migratory Bird Habitat Protection) – Sections 3a and 3e of EO 13186 direct Federal agencies to evaluate the impacts of their actions on migratory birds, with emphasis on species of concern, and inform the USFWS of potential negative impacts on migratory birds. Proposed revisions to the 1974 MP would not result in adverse impacts on migratory birds or their habitat; in fact, beneficial impacts could occur through protection of habitat as a result of implementation of the 2018 MP.



Migratory Bird Treaty Act – The Migratory Bird Treaty Act of 1918 extends Federal protection to migratory bird species. The nonregulated “take” of migratory birds is prohibited under this act in a manner similar to the prohibition of “take” of threatened and endangered species under the Endangered Species Act. The timing of resource management activities would be coordinated to avoid impacts on migratory and nesting birds.

Clean Water Act (CWA) of 1977 – The Proposed Action is in compliance with all state and Federal CWA regulations and requirements and is regularly monitored by the USACE and Colorado Department of Public Health and Environment for water quality. A state water quality certification pursuant to Section 401 of the CWA is not required for implementation of the 2018 MP. There would be no change in the existing management of the reservoir that would impact water quality.

National Historic Preservation Act (NHPA) of 1966, as amended – Compliance with the NHPA of 1966, as amended, requires identification of all properties in the project area listed in, or eligible for listing in, the NRHP. All previous surveys and site salvages were coordinated with the Colorado State Historic Preservation Officer. Known sites are mapped and avoided by maintenance activities. Cultural resource surveys and/or evaluations would be required prior to any earthmoving or other potentially impacting activities in areas that have not undergone previous cultural resource surveys and/or evaluations.

Clean Air Act of 1977 – The USEPA established nationwide air quality standards to protect public health and welfare. Existing operation and management of the reservoir is compliant with the Clean Air Act and will not change with implementation of the 2018 MP.

Farmland Protection Policy Act (FPPA) of 1980 and 1995 – The FPPA’s purpose is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. While there is Prime Farmland on John Martin Reservoir project lands based on the NRCS Web Soil Survey Map, implementation of the 2018 MP is not expected to impact Prime Farmland as no ground disturbing activities are being proposed outside of areas already impacted by HDR usage. Any future ground disturbing activities within areas designated as Prime Farmland will be coordinated with NRCS.

Executive Order 11990, Protection of Wetlands – EO 11990 requires Federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in executing Federal projects. The Proposed Action complies with EO 11990.

Executive Order 11988, Floodplain Management – This EO directs Federal agencies to evaluate the potential impacts of proposed actions in floodplains. The operation and management of the existing project complies with EO 11988 and this will not change with implementation of the 2018 MP.

CEQ Memorandum dated August 11, 1980, Prime or Unique Farmlands – Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The Proposed Action would not impact Prime Farmland present on John Martin

Reservoir project lands as no ground disturbing activities are being proposed outside the areas already impacted by HDR usage.

Executive Order 12898, Environmental Justice – This EO directs Federal agencies to achieve environmental justice to the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review. Agencies are required to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Implementation of the 2018 MP will not result in a disproportionate adverse impact on minority or low-income population groups.

Executive Order 13045, Protection of Children – This EO requires each Federal agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children” and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” This EO was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. The potential for impacts on the health and safety of children is greater where projects are located near residential areas. Implementation of the 2018 MP would not result in a disproportionate adverse impact on children’s health and safety.

## **SECTION 6: IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES**

NEPA requires that Federal agencies identify “any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented” (42 U.S.C. § 4332). An irreversible commitment of resources occurs when the primary or secondary impacts of an action result in the loss of future options for a resource. Usually, this is when the action affects the use of a nonrenewable resource or it affects a renewable resource that takes a long time to renew. The impacts for this project from the reclassification of land would not be considered an irreversible commitment because subsequent MP revisions could result in some lands being reclassified to a prior, similar land classification. An irretrievable commitment of resources is typically associated with the loss of productivity or use of a natural resource (e.g., loss of production or harvest). No irreversible or irretrievable impacts on Federally protected species or their habitat is anticipated from implementing revisions to the John Martin Reservoir MP.

## **SECTION 7: PUBLIC AND AGENCY COORDINATION**

In accordance with 40 CFR §§1501.7, 1503, and 1506.6, the USACE initiated public involvement and agency scoping activities to solicit input on the 2018 MP revision process, as well as identify reclassification proposals, and identify significant issues related to the Proposed Action. The USACE began its public involvement process with a public scoping meeting to provide an avenue for public and agency stakeholders to ask questions and provide comments. This public scoping meeting was held on 27 October 2016 at the Colorado Division of Parks and Wildlife Office in Lamar, Colorado. The

USACE, Albuquerque District, placed advertisements on the USACE webpage, social media, and print publications two weeks prior to the public scoping meeting.

The final draft Master Plan and Environmental Assessment was made available for a 30-day public and agency review online beginning 09 February 2018. The process of announcing the availability of the draft final Master Plan and the requirements for submitting comments included sending an Notice of Availability (NOA) via letters and e-mails to agencies and public officials, and e-mailing NOAs to those who previously attended meetings or submitted comments leaving their e-mail address. A press release was submitted simultaneously to local and regional news agencies for publication.

Appendix A of this EA includes a copy of the NOA, news release, and a sample stakeholder letter, in addition copies of the comments received from the agencies and public. Please refer to Chapter 7 of the 2018 MP for a summary of comments and USACE responses. The final version of the Master Plan, EA and FONSI signed by the District Engineer for implementation will be posted on the Albuquerque District website.

## SECTION 8: REFERENCES

- Center for Biological Diversity v. National Highway Traffic Safety Administration, 538 F.3d 1172, 1217 (9<sup>th</sup> Cir. 2008)
- Colorado Department of Public Health and Environment. 2012. *Draft Revised PM10 Maintenance Plan for the Lamar Attainment/Maintenance Area*. Available on the internet at: [https://www.colorado.gov/pacific/sites/default/files/AP\\_PO\\_Lamar-PM10-Attainment-Maintenance-Plan-%28Revised%202012%29.pdf](https://www.colorado.gov/pacific/sites/default/files/AP_PO_Lamar-PM10-Attainment-Maintenance-Plan-%28Revised%202012%29.pdf)
- Colorado Department of Labor. Labor Market Information (Eastern and Southern Colorado Growth Rates.
- Colorado Department of Local Affairs. 2015 Estimates and 2045 Projections for Planning Region 6: Baca, Bent, Crowley, Kiowa, and Prowers Counties.
- Council on Environmental Quality (CEQ). 2005. Executive Office of the President. *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*.
- Colorado Parks and Wildlife. 2014. Statewide Comprehensive Outdoor Recreation Plan. [https://cpw.state.co.us/Documents/Commission/2014/Mar/24-PowerPoint-2014\\_SCORP-March2014PWCMtg.pdf](https://cpw.state.co.us/Documents/Commission/2014/Mar/24-PowerPoint-2014_SCORP-March2014PWCMtg.pdf)
- Colorado Parks and Wildlife. 2015. Colorado Parks and Wildlife Strategic Plan
- CEQ, 2015. Executive Office of the President. *Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts*.
- United States Army Corps of Engineers (USACE). 2018. John Martin Reservoir Master Plan, Arkansas River Basin, Bent County, Colorado. USACE, Albuquerque District.
- USACE. 1988. *Engineering Regulation 200-2-2, Procedures for Implementing NEPA*. Washington, DC.
- USACE. 1972. Design Memorandum No 1, Revised 1974 Master Plan for John Martin Reservoir, Arkansas River Basin, Arkansas River, Colorado. USACE Albuquerque District.
- USACE. 2016. OMBIL Invasive Species Records. USACE, Albuquerque District.
- USACE. 2015. Operations Management Plan. USACE, Albuquerque District
- USACE. 2002. Endangered Species Management Plan for Piping Plovers (*Charadrius melodus*) and Interior Least Terns (*Sterna antillarum athalassos*). John Martin Reservoir Project and John Martin State Park Bent Co., Colorado. USACE, Albuquerque District.
- USACE. 2001. Finding of No Significant Impact and Final Environmental Assessment for the Lease Agreement that would transfer Management of Several Recreation Areas and Surface Water Management from the U.S. Army Corps of Engineers

to Colorado State Parks, John Martin Dam and Reservoir Project Bent County, Colorado. USACE, Albuquerque District.

U.S. Census Bureau. 2000. Population Division (2000 Estimate). 2000 Decennial Census. Accessed through <http://factfinder2.census.gov/>

U.S. Census Bureau, 2015. American Community Survey 5-Year Estimates, 2010-2015. Selected Economic Characteristics. Accessed through [http://factfinder2, census.gov](http://factfinder2.census.gov).

U.S. Census Bureau. 2015. State and County QuickFacts. Internet URL: <http://quickfacts.census.gov/qfd/index.html>

U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey. Internet URL: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

U.S. Fish and Wildlife Service (USFWS). 2018. IPaC for Information and Planning Conservation, USFWS trust resources. Internet URL: <https://ecos.fws.gov/ipac/>

## **SECTION 9: ACRONYMS/ABBREVIATIONS**

%	Percent
°	Degrees
BMP	Best Management Practice
CAP	Climate Action Plan
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CPW	Colorado Division of Parks and Wildlife
CRMP	Cultural Resources Management Plan
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EP	Engineer Pamphlet
ER	Engineer Regulation
ESA	Environmentally Sensitive Area
F	Fahrenheit
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GHG	Greenhouse Gas
GIS	Geographic Information System
HDR	High Density Recreation
IPAC	Information for Planning and Conservation
LDR	Low Density Recreation
LEED	Leadership in Energy and Environmental Design
MP	Master Plan
MRML	Multiple Resource Management Lands
msl	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NO	Nitrogen Oxide
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRRS	National Recreation Reservation Service
NVGD	National Vertical Geodetic Data
O <sub>3</sub>	Ozone
OMBIL	Operations and Maintenance Business Information Link
Pb	Lead
PCB	Polychlorinated Biphenyls
PM <sub>2.5</sub>	Particulate Matter Less than 2.5 Microns
PM <sub>10</sub>	Particulate Matter Less than 10 Microns
PO	Project Operations

RPEC	Regional Planning and Environmental Center
RV	Recreational Vehicle
SGCN	Species of Greatest Conservation Need
SO <sub>2</sub>	Sulfur Dioxide
SWA	State Wildlife Area
T&E	Threatened and Endangered
U.S.	United States
U.S.C.	U.S. Code
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compounds
VM	Vegetation Management
WHAP	Wildlife Habitat Appraisal Procedures
WM	Wildlife Management
ZOI	Zone of Influence

#### **SECTION 10: LIST OF PREPARERS**

Marcia Hackett – Regional Technical Specialist, Regional Planning and Environmental Center; 20 years of experience.

Mandy McGuire – Regional Technical Specialist, Regional Planning and Environmental Center; 7 years of USACE experience.

Jennifer Purcell – Regional Economist, Regional Planning and Environmental Center; 2 years of USACE experience.

Andrew Wastell – Natural Resource Specialist, Albuquerque District; 2 years of USACE experience.









**DEPARTMENT OF THE ARMY  
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS  
JOHN MARTIN RESERVOIR PROJECT OFFICE  
29955 COUNTY ROAD 25.75  
HASTY, CO 81044**

OCT XX, 2016

Dear John Martin Reservoir Stakeholder:

The U.S. Army Corps of Engineers (USACE) Albuquerque District, will host a public meeting on Thursday, October 27, 2016 to gain public input as we prepare to revise the Master Plan for John Martin Reservoir.

The meeting will be held for our partners, local municipalities, key stakeholders, and the general public. An "Open House" will begin at 5:30 p.m. followed by a formal presentation at 6:00 p.m. At the conclusion of the presentation there will be a session where the public can ask questions and make comments about the project. The meeting will be held at the Colorado Parks and Wildlife Office, 2500 South Main Street, Lamar, Colorado.

Construction of the John Martin Dam and Reservoir began in August of 1940, but work was suspended in the spring of 1943 due to World War II. Construction resumed in the spring of 1946 and the project was completed in October of 1948. The Dam was built for the purposes of flood control, and irrigation. The current Master Plan for John Martin Reservoir was completed in November of 1974 and is in need of revision to address changes in regional land use, population, outdoor recreation trends, and USACE management policy. Key topics to be addressed in the revised Master Plan include revised land classifications, new natural and recreational resource management objectives, recreation facility needs and special topics such as invasive species management and threatened and endangered species habitat. Public participation and feedback is critical to the successful revision of the Master Plan.

A Master Plan is defined as "the strategic land use management document that guides the comprehensive management and development of all recreational, natural, and cultural resources throughout the life of the water resource development project". In general, it defines "how" the resources will be used by the general public. The Master Plan does not address in detail the technical operational aspects of the lake with respect to flood risk management. The Master Plan focuses on all USACE fee-owned land (easements, licenses, leases, etc.) at John Martin Reservoir.

Questions pertaining to the proposed revision can be addressed to:

Karen Downey, Operations Project Manager  
John Martin Reservoir Project office  
29955 County Road 25.75  
Hasty, CO 81044

Sincerely,

Karen S. Downey  
John Martin Operations Project Manager



**DEPARTMENT OF THE ARMY**  
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS  
4101 JEFFERSON PLAZA NE  
ALBUQUERQUE, NM 87109-3435

February 9, 2018

**NOTICE OF AVAILABILITY**  
**DRAFT JOHN MARTIN RESERVOIR MASTER PLAN, FINDING OF NO SIGNIFICANT**  
**IMPACT, AND ENVIRONMENTAL ASSESSMENT, ARKANSAS RIVER BASIN**  
**BENT COUNTY, COLORADO**

The public is hereby notified of the availability of the draft John Martin Reservoir Master Plan (hereafter Plan), draft Finding of No Significant Impact (FONSI), and Environmental Assessment (EA). The Plan is a vital tool produced and used by the U.S. Army Corps of Engineers (USACE) to guide the responsible stewardship of USACE-administered lands and resources for the benefit of present and future generations. The Plan provides direction for appropriate management, use, development, enhancement, protection, and conservation of the natural, cultural, and man-made resources at John Martin Reservoir. The Plan presents an inventory and analysis of land resources; resource management objectives; land use classifications; resource use plan for each land use classification; current and projected park facility needs; an analysis of existing and anticipated resource use; and anticipated influences on overall project operation and management. Prior to this proposed Plan revision, the original Plan for John Martin Reservoir was approved in 1974.

There will be a 30-day public comment period beginning on February 9, 2018 and running through March 12, 2018. The draft revised Plan will be made available beginning February 9, 2018 at the following website:

<http://www.spa.usace.army.mil/Missions/Civil-Works/Recreation/John-Martin-Reservoir/Master-Plan/>

A hard copy of the Draft Plan, FONSI, and EA will be available for review at the following location beginning February 9, 2018: U.S. Army Corps of Engineers, John Martin Reservoir Project Office, 29955 County Road 25.75, Hasty, Colorado 81044.

Please address any comments via email to [JohnMartin@usace.army.mil](mailto:JohnMartin@usace.army.mil) or mail to Andrew Wastell, Natural Resource Specialist, CESPA-OD-S, U.S. Army Corps of Engineers, 4101 Jefferson Plaza NE, Albuquerque, New Mexico or Ms. Rhonda Fields, Project Manager, CESWF-PEC-TP, U.S. Army Corps of Engineers, Regional Planning and Environmental Center, P.O. Box 17300, Fort Worth, Texas 76102-0300.

A handwritten signature in black ink, appearing to read "D. C. Sims", is located below the contact information.

Douglas C. Sims, RPA  
Chief, Environmental Compliance Branch  
Regional Planning and Environmental Center



# NEWS RELEASE

## **U.S. ARMY CORPS OF ENGINEERS**

For Immediate Release:  
October 24, 2016

## **BUILDING STRONG.**

Contact:  
Karen Downey: 719-336-3476  
Karen.s.downey@usace.army.mil

### **U.S. Army Corps of Engineers to host public meeting for the John Martin Reservoir Master Plan revision**

**ALBUQUERQUE** – The Albuquerque District, U.S. Army Corps of Engineers (USACE), will host a public meeting on October 27, 2016, to gain public input as it prepares to update and revise the Master Plan for John Martin Reservoir.

The public meeting will be held at the Colorado Parks and Wildlife office, 2500 South Main Street, Lamar, Colorado, and is open to the general public. An “open house” will begin at 5:30 p.m. followed by a formal presentation at 6:00 p.m. At the conclusion of the presentation there will be a session where the public can ask questions and make comments about the project.

Construction of the John Martin Dam and Reservoir began in August 1940, but work was suspended in the spring of 1943 due to World War II. Construction resumed in the spring of 1946 and the project was completed in October 1948. The dam was built for the purposes of flood control and irrigation. The current Master Plan for John Martin Reservoir was finalized in November 1974 and is in need of revision to address changes in regional land use, population, outdoor recreation trends, and USACE management policy. Key topics to be addressed in the revised Master Plan include: revised land classifications, new natural and recreational resource management objectives, recreation facility needs and special topics such as invasive species management, and threatened and endangered species habitat. Public participation and feedback is critical to the successful revision of the Master Plan.

A Master Plan is defined as “the strategic land use management document that guides the comprehensive management and development of all recreational, natural, and cultural resources throughout the life of the water resource development project.” In general, it defines “how” the resources will be used by the general public.

The Master Plan study area includes all USACE fee-owned land (easements, licenses, leases, etc.) at John Martin Reservoir.

The primary purposes of the John Martin project are flood risk management, irrigation, recreation, and fish and wildlife habitat.

Questions pertaining to the proposed revision can be addressed to: Ms. Karen Downey, John Martin Operations Project Manager, John Martin Reservoir Project Office 29955 County Road 25.75, Hasty,

### **U.S. ARMY CORPS OF ENGINEERS – ALBUQUERQUE DISTRICT**

4101 Jefferson Plaza, NE, Albuquerque, NM 87109  
Our Website: <http://www.spa.usace.army.mil/>

CO 81044, (719) 336-3476, and Ms. Rhonda Fields, Project Manager, CESWF-RPEC-PM, U.S. Army Corps of Engineers, Fort Worth District, P.O. Box 17300, Fort Worth, TX 76102-0300, (817) 886-1681.

About the Albuquerque District: The Albuquerque District covers all of New Mexico, about a third of Colorado, and one-fifth of Texas.

Visit the Albuquerque District Web site at: <http://www.spa.usace.army.mil> and Facebook at: <https://www.facebook.com/albuquerquedistrict>

**U.S. ARMY CORPS OF ENGINEERS – ALBUQUERQUE DISTRICT**

4101 Jefferson Plaza, NE, Albuquerque, NM 87109

Our Website: <http://www.spa.usace.army.mil/>



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Colorado Ecological Services Field Office  
Denver Federal Center  
P.O. Box 25486  
Denver, CO 80225-0486  
Phone: (303) 236-4773 Fax: (303) 236-4005  
<http://www.fws.gov/coloradoES>  
<http://www.fws.gov/platteriver>

In Reply Refer To:

May 14, 2018

Consultation Code: 06E24000-2018-SLI-0045

Event Code: 06E24000-2018-E-02629

Project Name: John Martin Reservoir Master Plan Revision

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Migratory Birds
  - Wetlands
-





## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Colorado Ecological Services Field Office**

Denver Federal Center

P.O. Box 25486

Denver, CO 80225-0486

(303) 236-4773

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## Project Summary

Consultation Code: 06E24000-2018-SLI-0045

Event Code: 06E24000-2018-E-02629

Project Name: John Martin Reservoir Master Plan Revision

Project Type: LAND - MANAGEMENT PLANS

**Project Description:** The John Martin Reservoir (JMR) Master Plan (John Martin Reservoir, Bent County, Colorado) is the long-term strategic land use management document that guides the comprehensive management and development of all the project's recreational, natural, and cultural resources. Under the guidance of ER-1130-2-550 Change 7, the Plan guides the efficient and cost-effective development, management, and use of project lands. It is a dynamic tool that provides for the responsible stewardship and sustainability of the project's resources for the benefit of present and future generations. The Plan works in tandem with the Operational Management Plan (OMP), which is the implementation tool for the resource objectives and development needs identified in the Master Plan. The Master Plan guides and articulates the USACE responsibilities pursuant to federal laws. Efforts are under way to revise the current JMR Master Plan, last revised in 1974. The Master Plan revision will update land classifications, plan for the modernization of existing parks, and inform the management of wildlife and other resource lands within USACE managed property at JMR for the next 25 years.

**Project Location:**

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.0793353777992N103.02640237341538W>



Counties: Bent, CO

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## Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Birds

NAME	STATUS
Least Tern <i>Sterna antillarum</i> Population: interior pop. No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8505">https://ecos.fws.gov/ecp/species/8505</a>	Endangered
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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# Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birds and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
<b>Bald Eagle <i>Haliaeetus leucocephalus</i></b> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Jul 31
<b>Burrowing Owl <i>Athene cunicularia</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9737">https://ecos.fws.gov/ecp/species/9737</a>	Breeds Mar 15 to Aug 31

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NAME	BREEDING SEASON
<b>Cassin's Sparrow</b> <i>Aimophila cassinii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9512">https://ecos.fws.gov/ecp/species/9512</a>	Breeds Aug 1 to Oct 10
<b>Chestnut-collared Longspur</b> <i>Calcarius ornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 10
<b>Golden Eagle</b> <i>Aquila chrysaetos</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>	Breeds Jan 1 to Aug 31
<b>Hudsonian Godwit</b> <i>Limosa haemastica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
<b>Lark Bunting</b> <i>Calamospiza melanocorys</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 10 to Aug 15
<b>Lesser Yellowlegs</b> <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
<b>Lewis's Woodpecker</b> <i>Melanerpes lewis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9408">https://ecos.fws.gov/ecp/species/9408</a>	Breeds Apr 20 to Sep 30
<b>Long-billed Curlew</b> <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/5511">https://ecos.fws.gov/ecp/species/5511</a>	Breeds Apr 1 to Jul 31
<b>Semipalmated Sandpiper</b> <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
<b>Whimbrel</b> <i>Numenius phaeopus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9483">https://ecos.fws.gov/ecp/species/9483</a>	Breeds elsewhere

NAME	BREEDING SEASON
<b>Willet <i>Tringa semipalmata</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5

## Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

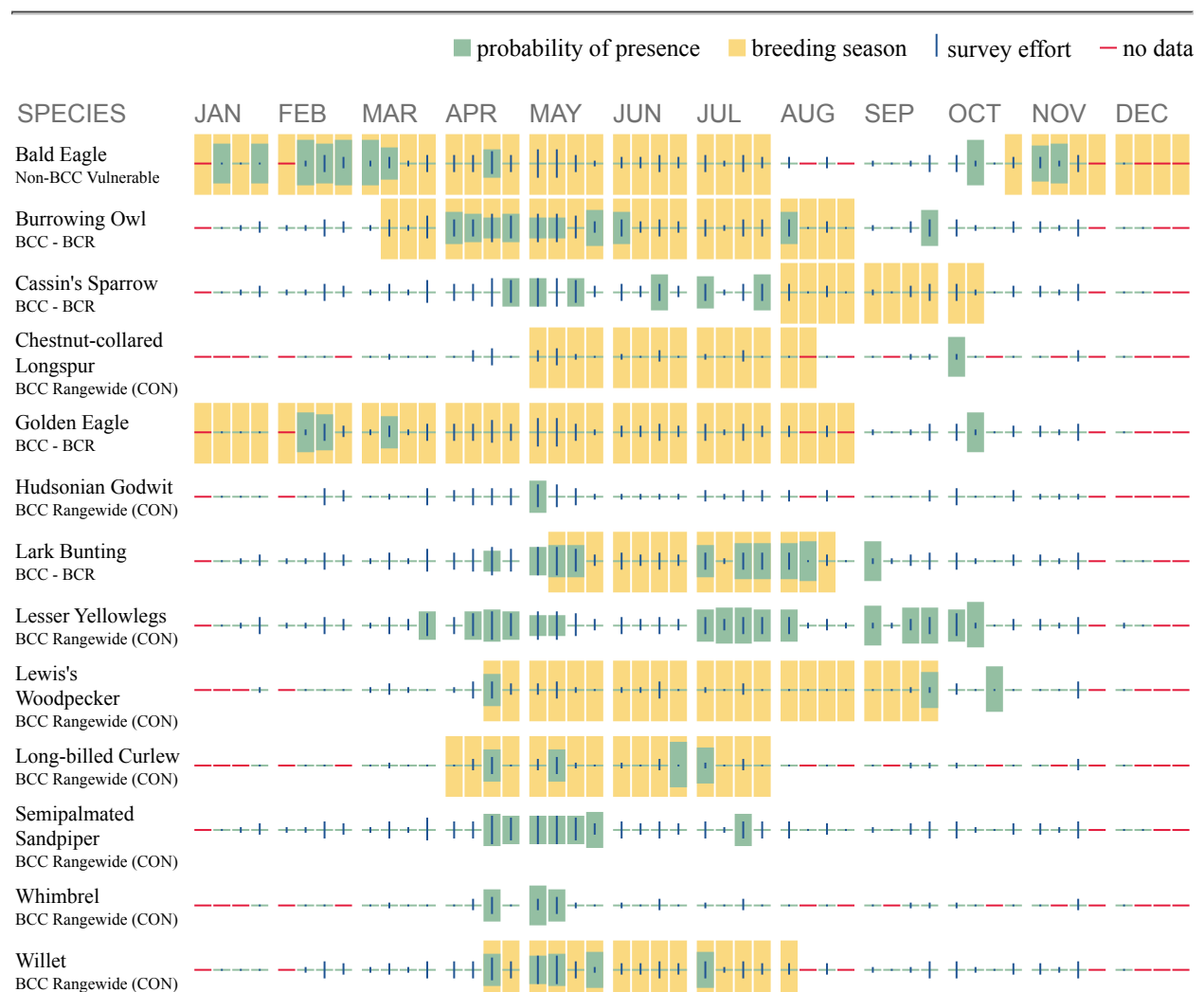
### Survey Effort (|)



A week is marked as having no data if there were no survey events for that week.

## Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

## Migratory Birds FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

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The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical](#)

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[Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

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# Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

## FRESHWATER EMERGENT WETLAND

- [PEMA](#)
- [PEMC](#)
- [PEMK](#)

## FRESHWATER FORESTED/SHRUB WETLAND

- [PSSA](#)
- [PFOA](#)
- [PSSC](#)

## FRESHWATER POND

- [PUSC<sub>x</sub>](#)
- [PUSA<sub>x</sub>](#)
- [PUBG](#)

## LAKE

- [L2USK](#)
- [L1UBG<sub>x</sub>](#)
- [L2UBG<sub>x</sub>](#)

## RIVERINE

- [R2UBF](#)
  - [R2UBH](#)
  - [R4SBA](#)
  - [R4SBC<sub>x</sub>](#)
  - [R2USA](#)
-

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Project information

### NAME

John Martin Reservoir Master Plan Revision

### LOCATION

Bent County, Colorado



### DESCRIPTION

The John Martin Reservoir (JMR) Master Plan (John Martin Reservoir, Bent County, Colorado) is the long-term strategic land use management document that guides the comprehensive management and development of all the project's recreational, natural, and cultural resources. Under the guidance of ER-1130-2-550 Change 7, the Plan guides the efficient and cost-effective development, management, and use of project lands. It is a dynamic tool that provides for the responsible stewardship and sustainability of the project's resources for the benefit of present and future generations. The Plan works in tandem with the Operational Management Plan (OMP), which is the implementation tool for the resource objectives and development needs identified in the Master Plan. The Master Plan guides and articulates the USACE responsibilities pursuant to federal laws. Efforts are under way to revise the current JMR Master Plan, last revised in 1974. The Master Plan revision will update land classifications, plan for the modernization of existing parks, and inform the management of wildlife and other resource lands within USACE managed property at JMR for the next 25 years.

## Local office

Colorado Ecological Services Field Office

☎ (303) 236-4773

📠 (303) 236-4005

### MAILING ADDRESS

Denver Federal Center

P.O. Box 25486

Denver, CO 80225-0486

### PHYSICAL ADDRESS

134 Union Boulevard, Suite 670

Lakewood, CO 80228-1807

<http://www.fws.gov/coloradoES>

<http://www.fws.gov/platteriver>

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

## Birds

NAME	STATUS
Least Tern <i>Sterna antillarum</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8505">https://ecos.fws.gov/ecp/species/8505</a>	Endangered
Piping Plover <i>Charadrius melodus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a>	Threatened

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>

- Nationwide conservation measures for birds

<http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

**Bald Eagle** *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Oct 15 to Jul 31

**Buff-breasted Sandpiper** *Calidris subruficollis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9488>

Breeds elsewhere

**Burrowing Owl** *Athene cunicularia*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9737>

Breeds Mar 15 to Aug 31

**Cassin's Sparrow** *Aimophila cassinii*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9512>

Breeds Aug 1 to Oct 10

**Chestnut-collared Longspur** *Calcarius ornatus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Aug 10

**Golden Eagle** *Aquila chrysaetos*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/1680>

Breeds Jan 1 to Aug 31

**Hudsonian Godwit** *Limosa haemastica*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

**Lark Bunting** *Calamospiza melanocorys*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds May 10 to Aug 15

**Lesser Yellowlegs** *Tringa flavipes*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

Breeds elsewhere



<b>Lewis's Woodpecker</b> <i>Melanerpes lewis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9408">https://ecos.fws.gov/ecp/species/9408</a>	Breeds Apr 20 to Sep 30
<b>Long-billed Curlew</b> <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/5511">https://ecos.fws.gov/ecp/species/5511</a>	Breeds Apr 1 to Jul 31
<b>Mccown's Longspur</b> <i>Calcarius mccownii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9292">https://ecos.fws.gov/ecp/species/9292</a>	Breeds May 1 to Aug 15
<b>Mountain Plover</b> <i>Charadrius montanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/3638">https://ecos.fws.gov/ecp/species/3638</a>	Breeds Apr 15 to Aug 15
<b>Semipalmated Sandpiper</b> <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
<b>Whimbrel</b> <i>Numenius phaeopus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9483">https://ecos.fws.gov/ecp/species/9483</a>	Breeds elsewhere
<b>Willet</b> <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
<b>Willow Flycatcher</b> <i>Empidonax traillii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/3482">https://ecos.fws.gov/ecp/species/3482</a>	Breeds May 20 to Aug 31

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (—)

A week is marked as having no data if there were no survey events for that week.

## Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.

SPECIES	<div> <div>■ probability of presence</div> <div>■ breeding season</div> <div>  survey effort</div> <div>— no data</div> </div>											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<b>Bald Eagle</b> Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)												
<b>Buff-breasted Sandpiper</b> BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)												
<b>Burrowing Owl</b> BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)												
<b>Cassin's Sparrow</b> BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)												
<b>Chestnut-collared Longspur</b> BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)												
<b>Golden Eagle</b> BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)												
<b>Hudsonian Godwit</b> BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)												
<b>Lark Bunting</b> BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)												
<b>Lesser Yellowlegs</b> BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)												
<b>Lewis's Woodpecker</b> BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)												
<b>Long-billed Curlew</b> BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)												
<b>Mccown's Longspur</b> BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)												
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<b>Mountain Plover</b> BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)												
<b>Semipalmated Sandpiper</b> BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)												

**Whimbrel**

BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

*Presence data is not available*

**Willet**

BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

*Presence data is not available*

**Willow Flycatcher**

BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

*Presence data is not available*

### **Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### **What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

### Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

#### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

#### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



## COLORADO Parks and Wildlife

Department of Natural Resources

Lamar Service Center  
2500 South Main Street  
Lamar, CO 81052  
P 719.336.6600 | F 719.336.6623

### US Army Corps of Engineers John Martin Reservoir Master Plan Revision Comments

CPW is submitting the following comments in relation to the Master Plan revision at John Martin Reservoir:

CPW is serious about continuing the wildlife area license agreement and park lease at John Martin. CPW feels it is important to continue public access on the project site due primarily to the public benefit for outdoor recreation, fishing and hunting. CPW feels strongly that the current management of the area is sufficient to protect the Corp property as well as wildlife resources.

Specifically on the management of Least Terns and Piping Plovers, CPW feels strongly that no additional protective measures are warranted. In March of 2015, both Corp and CPW personnel agreed to a management strategy for minimizing impacts to the terns and plovers while maintaining public access (see attached). While CPW understands that the Corp may need to complete a land classification study, we do not believe further protection is warranted based on a kernel density estimate that CPW provided to the Corp. Anything at or above a 25% density study becomes over-reaching and potentially impacts public access across a broad area. CPW feels that the areas highlighted in the density study are adequately protected under the current management plan. Additionally, the areas needing protection are a moving target based on water levels in the reservoir.

CPW recommends that under the new master management plan the areas of responsibility be clearly defined, to include all parcels of land under CPW management. Past agreement and amendments have left some areas in limbo, and CPW uncertain of our responsibility on those sites. A new license agreement (due in 2018) should clarify any ambiguous responsibilities.

CPW also feels it important to include language in the new management plan that recognizes the states authority over managing wildlife. CPW will continue to work cooperatively with Corp personnel on John Martin for habitat management. However, wildlife management decisions rest with the State. CPW does however recognize the onerous Biological Opinion in relation to tern and plover responsibilities due to the federal status of those birds.

CPW would also like to point out the reduced funding for Aquatic Nuisance Species (ANS) management. CPW currently lost funding to support ongoing ANS work at John Martin. It also



appears Corp struggles to find resources for supporting ANS work at John Martin. This may require scaling back ANS duties at John Martin. CPW feels it is important for the revised management plan to reflect the current status of ANS operations, and that the future may not require additional efforts. This is particularly important for waterfowl hunting during the season when the ANS station is not manned, and for public access on the County Road 19 boat ramp.

Lastly, CPW would suggest that the new management plan include a plan for acquiring access along the South Shore, specifically in the area of the train trestle. This area was historically accessible until a private landowner bought acreage along the south shore and cut off access. This area provides recreational camping, fishing and hunting. CPW request that Corp work cooperatively with CPW to try and gain access back into this area. This site is covered under CPW's license agreement with no public access.

## COLORADO PARKS &amp; WILDLIFE



## Threatened and Endangered List

COMMON NAME	SCIENTIFIC NAME	STATUS*
<b>AMPHIBIANS</b>		
Boreal Toad	<i>Bufo boreas boreas</i>	SE
Couch's Spadefoot	<i>Scaphiopus couchii</i>	SC
Great Plains Narrowmouth Toad	<i>Gastrophryne olivacea</i>	SC
Northern Cricket Frog	<i>Acris crepitans</i>	SC
Northern Leopard Frog	<i>Rana pipiens</i>	SC
Plains Leopard Frog	<i>Rana blairi</i>	SC
Wood Frog	<i>Rana sylvatica</i>	SC
<b>BIRDS</b>		
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	SC
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC
Burrowing Owl	<i>Athene cunicularia</i>	ST
Columbian Sharp-Tailed Grouse	<i>Tympanuchus phasianellus columbianus</i>	SC
Ferruginous Hawk	<i>Buteo regalis</i>	SC
Greater Sage Grouse	<i>Centrocercus urophasianus</i>	SC
Greater Sandhill Crane	<i>Grus canadensis tabida</i>	SC
Gunnison Sage-Grouse	<i>Centrocercus minimus</i>	FT, SC
Least Tern	<i>Sterna antillarum</i>	FE, SE
Lesser Prairie-Chicken	<i>Tympanuchus pallidicinctus</i>	ST
Long-Billed Curlew	<i>Numenius americanus</i>	SC
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	FT, ST
Mountain Plover	<i>Charadrius montanus</i>	SC
Plains Sharp-Tailed Grouse	<i>Tympanuchus phasianellus jamesii</i>	SE
Piping Plover	<i>Charadrius melodus circumcinctus</i>	FT, ST
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	FE, SE
Western Snowy Plover	<i>Charadrius alexandrinus</i>	SC

Western Yellow-Billed Cuckoo	Coccyzus americanus	SC
Whooping Crane	Grus americana	FE, SE
<b>FISH</b>		
Arkansas Darter	Etheostoma cragini	ST
Bonytail	Gila elegans	FE, SE
Brassy Minnow	Hybognathus hankinsoni	ST
Colorado Pikeminnow	Ptychocheilus lucius	FE, ST
Colorado River Cutthroat Trout	Oncorhynchus clarki pleuriticus	SC
Colorado Roundtail Chub	Gila robusta	SC
Common Shiner	Luxilus cornutus	ST
Flathead Chub	Platygobio gracilus	SC
Greenback Cutthroat Trout	Oncorhynchus clarki stomias	FT, ST
Humpback Chub	Gila cypha	FE, ST
Iowa Darter	Etheostoma exile	SC
Lake Chub	Couesius plumbeus	SE
Mountain Sucker	Catostomus platyrhynchus	SC
Northern Redbelly Dace	Phoxinus eos	SE
Plains Minnow	Hybognathus placitus	SE
Plains Orangethroat Darter	Etheostoma spectabile	SC
Rio Grande Chub	Gila pandora	SC
Rio Grande Cutthroat Trout	Oncorhynchus clarki virginalis	SC
Rio Grande Sucker	Catostomus plebeius	SE
Razorback Sucker	Xyrauchen texanus	FE, SE
Southern Redbelly Dace	Phoxinus erythrogaster	SE
Stonecat	Noturus flavus	SC
Suckermouth Minnow	Phenacobius mirabilis	SE
<b>MAMMALS</b>		
Black-Footed Ferret	Mustela nigripes	FE, SE
Black-Tailed Prairie Dog	Cynomys ludovicianus	SC
Botta's Pocket Gopher	Thomomys bottae rubidus	SC
Gray Wolf	Canis lupus	FE, SE
Grizzly Bear	Ursus arctos	FT, SE
Kit Fox	Vulpes macrotis	SE



Lynx	Lynx canadensis	FT, SE
Northern Pocket Gopher	Thomomys talpoides macrotis	SC
Preble's Meadow Jumping Mouse	Zapus hudsonius preblei	FT, ST
River Otter	Lontra canadensis	ST
Swift fox	Vulpes velox	SC
Townsend's Big-Eared Bat	Corynorhinus townsendii pallescens	SC
Wolverine	Gulo gulo	SE
<b>REPTILES</b>		
Triploid Checkered Whiptail	Cnemidophorus neotesselatus	SC
Midget Faded Rattlesnake	Crotalus viridis concolor	SC
Longnose Leopard Lizard	Gambelia wislizenii	SC
Yellow Mud Turtle	Kinosternon flavescens	SC
Common King Snake	Lampropeltis getula	SC
Texas Blind Snake	Leptotyphlops dulcis	SC
Texas Horned Lizard	Phrynosoma cornutum	SC
Roundtail Horned Lizard	Phrynosoma modestum	SC
Massasauga	Sistrurus catenatus	SC
Common Garter Snake	Thamnophis sirtalis	SC
<b>MOLLUSKS</b>		
Rocky Mountain Capshell	Acroloxus coloradensis	SC
Cylindrical Papershell	Anodontoides ferussacianus	SC

**\*Status Codes**

- FE = Federally Endangered
- FT = Federally Threatened
- SE = State Endangered
- ST = State Threatened
- SC = State Special Concern (not a statutory category)

**Resources**

- [Species Profiles](#)

**Colorado's State Wildlife Action Plan (SWAP)**



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

April 12, 2018

Mr. Steve Turner  
State Historic Preservation Officer  
History Colorado, The Colorado Historical Society  
1200 Broadway  
Denver, CO 80202

Mr. Turner,

On February 9, 2018, the public and stakeholders were notified of the availability of the Draft John Martin Reservoir Master Plan (hereafter Plan), Finding of No Significant Impact (FONSI), and Environmental Assessment (EA) for a 30-day public comment review period beginning on February 9, 2018 and running through March 12, 2018 (Enclosure 1).

Through our internal review process, we discovered the Colorado State Historical Preservation Officer was accidentally left off of the stakeholders list and was never contacted for comment. For our mistake, we sincerely apologize. Tribal representatives were contacted and have provided comments on the Draft Plan (Enclosure 2).

The Draft Plan, FONSI, and EA will be available for your review, for 30 days beginning April 13, 2018, via the Internet on the USACE, Albuquerque District's website at the following address: <http://www.spa.usace.army.mil/Missions/Civil-Works/Recreation/John-Martin-Reservoir/Master-Plan/>.

Please address any comments via email to Ms. Rhonda Fields, Project Manager, Master Planning Section, Regional Planning and Environmental Center, U.S. Army Corps of Engineers at [rhonda.e.fields@usace.army.mil](mailto:rhonda.e.fields@usace.army.mil).

A handwritten signature in black ink, appearing to read "Doug C. Sims", is located below the text.

Douglas C. Sims, PMP, RPA  
Chief, Environmental Compliance Branch  
Regional Planning and Environmental Center

Encls



**DEPARTMENT OF THE ARMY**  
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS  
4101 JEFFERSON PLAZA NE  
ALBUQUERQUE, NM 87109-3435

February 9, 2018

**NOTICE OF AVAILABILITY**  
**DRAFT JOHN MARTIN RESERVOIR MASTER PLAN, FINDING OF NO SIGNIFICANT**  
**IMPACT, AND ENVIRONMENTAL ASSESSMENT, ARKANSAS RIVER BASIN**  
**BENT COUNTY, COLORADO**

The public is hereby notified of the availability of the draft John Martin Reservoir Master Plan (hereafter Plan), draft Finding of No Significant Impact (FONSI), and Environmental Assessment (EA). The Plan is a vital tool produced and used by the U.S. Army Corps of Engineers (USACE) to guide the responsible stewardship of USACE-administered lands and resources for the benefit of present and future generations. The Plan provides direction for appropriate management, use, development, enhancement, protection, and conservation of the natural, cultural, and man-made resources at John Martin Reservoir. The Plan presents an inventory and analysis of land resources; resource management objectives; land use classifications; resource use plan for each land use classification; current and projected park facility needs; an analysis of existing and anticipated resource use; and anticipated influences on overall project operation and management. Prior to this proposed Plan revision, the original Plan for John Martin Reservoir was approved in 1974.

There will be a 30-day public comment period beginning on February 9, 2018 and running through March 12, 2018. The draft revised Plan will be made available beginning February 9, 2018 at the following website:

<http://www.spa.usace.army.mil/Missions/Civil-Works/Recreation/John-Martin-Reservoir/Master-Plan/>

A hard copy of the Draft Plan, FONSI, and EA will be available for review at the following location beginning February 9, 2018: U.S. Army Corps of Engineers, John Martin Reservoir Project Office, 29955 County Road 25.75, Hasty, Colorado 81044.

Please address any comments via email to [JohnMartin@usace.army.mil](mailto:JohnMartin@usace.army.mil) or mail to Andrew Wastell, Natural Resource Specialist, CESPA-OD-S, U.S. Army Corps of Engineers, 4101 Jefferson Plaza NE, Albuquerque, New Mexico or Ms. Rhonda Fields, Project Manager, CESWF-PEC-TP, U.S. Army Corps of Engineers, Regional Planning and Environmental Center, P.O. Box 17300, Fort Worth, Texas 76102-0300.

A handwritten signature in black ink, appearing to read "D. C. Sims", is located below the contact information.

Douglas C. Sims, RPA  
Chief, Environmental Compliance Branch  
Regional Planning and Environmental Center



# SOUTHERN UTE INDIAN TRIBE

Southern Ute Cultural & Preservation Department  
P.O. Box 737, Mail Stop #73, Ignacio CO 81137  
Phone: 970-563-0100 Fax: 970-563-1098

March 12, 2018

Douglas C. Sims  
4101 Jefferson Plaza NE  
Albuquerque, NM 87109-3435

Dear Mr. Sims,

I have reviewed your Consultation Request under section 106 of the National Historic Preservation Act regarding the John Martin Reservoir Master Plan project and offer the following response as indicated by the box that is checked.

- ☐ NO INTEREST: I have determined that there is not a likelihood of eligible properties of religious and cultural significant to the Southern Ute Indian Tribe.
- ☐ NO EFFECT: I have determined that there are no properties of religious and cultural significance to the Southern Ute Indian Tribe that are listed on the National Register within the area of potential effect or that the proposed project will have no effect on any such properties that may be present.
- ☐ NO ADVERSE EFFECT: I have identified properties of cultural and religious significance within the area of effect that I believe are eligible for listing in the National Register, for which there would be no adverse effect as a result of the proposed project.
- ☐ ADVERSE EFFECT: I have identified properties of cultural and religious significance within the area of potential effect (APE) that are eligible for listing in the National Register. I believe the proposed project would cause an adverse effect on these properties.
- ☒ REQUEST FOR ADDITIONAL INFORMATION: The Southern Ute Indian Tribe requests additional information on the planned site for its impact on properties of religious and cultural importance to the Tribe as follows: We have read the master plan, we have noted that a cultural resources management plan (page 28) will be developed. We would like to consult and participate when it begins. Our oral histories tell us that wae were once in that area.

Note:

Sincerely,

Ms. Cassandra Atencio  
NAGPRA Coordinator  
Southern Ute Cultural Department  
Southern Ute Indian Tribe



TRIBAL HISTORIC PRESERVATION  
P.O. BOX 167  
CONCHO, OKLAHOMA 73022



1-800-247-4612 Toll Free

405-422-7484 Telephone

Department of the Army  
Douglas C. Sims  
4101 Jefferson Plaza NE  
Albuquerque, NM 87109-3435



February 16, 2018

THPO ID #: 186

RE: Notice of Availability Draft John Martin Reservoir Master Plan, Finding of No Significant Impact, and Environmental Assessment, Arkansas River Basin Bent County, Colorado

Dear Consultant:

On behalf of the Cheyenne and Arapaho Tribes, thank you for the notification of the Availability Draft John Martin Reservoir Master Plan. At this time, we **Concur** with your efforts. We offer our best wishes and look forward to future projects.

Please contact me at (405) 422-7416 or [mdemery@c-a-tribes.org](mailto:mdemery@c-a-tribes.org), if you have any questions or concerns. Alternate contact is Virginia Richey; she can be reached directly at (405) 422-7484 or [vrichey@c-a-tribes.org](mailto:vrichey@c-a-tribes.org). Thank you again for your notification!

Best Regards,

Micah Looper  
Research Analyst

CC: Virginia Richey  
Tribal Historic Preservation Office/THPO

**From:** Wadlington, Brandon E CIV USARMY CESWF (US)  
**To:** ["Tobias - HC, Mark"](#)  
**Subject:** RE: [Non-DoD Source] Re: Request for comment--- USACE John Martin Reservoir Master Plan Revision  
**Date:** Monday, April 30, 2018 11:38:00 AM

---

Hi Mark,

I understand the staffing issues and appreciate you getting back to us quickly.

The OMP is an internal planning document and covers recreation and Natural Resources projects for the current year, plus 4 years into the future. The way the Corps is currently handling the compliance is to consult on each individual project until a PA can be put into place.

I talked with some of the USACE Albuquerque District's Operations staff, it sounds like the development of a PA is in the works or will be in the works soon. In the meantime, our cultural resources folks will continue to consult on individual projects.

Brandon  
Biologist  
Regional Planning and Environmental Center  
US Army Corps of Engineers  
Office: 817-886-1720

-----Original Message-----

From: Tobias - HC, Mark [<mailto:mark.tobias@state.co.us>]  
Sent: Wednesday, April 25, 2018 8:45 PM  
To: Wadlington, Brandon E CIV USARMY CESWF (US) <BRANDON.E.WADLINGTON@usace.army.mil>  
Subject: Re: [Non-DoD Source] Re: Request for comment--- USACE John Martin Reservoir Master Plan Revision

Brandon,

Our environmental review unit is short staffed by approximately half and we will not be able to provide detailed comment on the proposed John Martin Reservoir Master Plan. That said, I do have a question regarding whether USACE sought comment from our office for the John Martin Reservoir Operational Management Plan (OMP). The OMP is described on page 1-3 of the MP as the "implementation tool" and therefore may be considered an undertaking with the potential to effect historic properties if any such properties are present. Did USACE complete a programmatic agreement for this earlier effort?

Thanks-

Mark Tobias

Intergovernmental Services Manager  
Office of Archaeology and Historic Preservation  
History Colorado Center  
1200 Broadway  
Denver, Colorado 80203  
(303) 866-4674  
[mark.tobias@state.co.us](mailto:mark.tobias@state.co.us) <<mailto:mark.tobias@state.co.us>>

On Wed, Apr 18, 2018 at 8:13 AM, Wadlington, Brandon E CIV USARMY CESWF (US)  
<BRANDON.E.WADLINGTON@usace.army.mil> <<mailto:BRANDON.E.WADLINGTON@usace.army.mil>> >

wrote:

Good morning Mark

I've got an updated Master Plan document attached for you. The proposed land classes are the same as the version available online.

This version has additional info added in section 2.3.2 Hicklin Springs Petroglyphs Site, and section 2.4.5. Social and Environmental Benefits.

Thanks

Brandon Wadlington  
Biologist  
Regional Planning and Environmental Center  
US Army Corps of Engineers  
Office: 817-886-1720

-----Original Message-----

From: Steve Turner - HC [<mailto:steve.turner@state.co.us> <<mailto:steve.turner@state.co.us>> ]

Sent: Thursday, April 12, 2018 8:36 AM

To: Mark Tobias <[mark.tobias@state.co.us](mailto:mark.tobias@state.co.us) <<mailto:mark.tobias@state.co.us>> >; Wadlington, Brandon E CIV USARMY CESWF (US) <[BRANDON.E.WADLINGTON@usace.army.mil](mailto:BRANDON.E.WADLINGTON@usace.army.mil)> <<mailto:BRANDON.E.WADLINGTON@usace.army.mil>> >

Subject: [Non-DoD Source] Re: Request for comment--- USACE John Martin Reservoir Master Plan Revision

Thank you I will forward this to Marc and ask him to get back to you

On Thu, Apr 12, 2018 at 7:33 AM Wadlington, Brandon E CIV USARMY CESWF (US) <[BRANDON.E.WADLINGTON@usace.army.mil](mailto:BRANDON.E.WADLINGTON@usace.army.mil) <<mailto:BRANDON.E.WADLINGTON@usace.army.mil>> <<mailto:BRANDON.E.WADLINGTON@usace.army.mil>> >> wrote:

\_\_\_\_\_  
\_\_\_\_\_

Good morning Mr. Turner

\_\_\_\_\_  
I'm Brandon Wadlington, USACE biologist assigned to the John Martin Reservoir Master Plan Revision team.

\_\_\_\_\_  
The master plan is a land management document that guides, through land classifications (i.e. project operations, high density recreation, environmentally sensitive area, & others), future management of resources on USACE fee owned property.

\_\_\_\_\_  
No "dirt turning" activities or changes to water level management are associated with the master plan revision.

\_\_\_\_\_  
We had a 30 day public & stakeholders comment period a couple months ago on the draft Master Plan, FONSI, and EA. During that time we realized that the Colorado SHPO had not been coordinated with. Our fault and apologies in this oversight. Tribal representatives were contacted and they have provided comments.

\_\_\_\_\_  
We're providing an additional 30 day period for you to review and comment on the draft documents starting tomorrow. I've got a hardcopy letter on the way to you. A digital copy of the letter is also attached with the link to the documents for review and who to send comments to.





## **APPENDIX C – WILDLIFE DOCUMENTS**

### **TRUST RESOURCES REPORT – USFWS**

### **OFFICIAL SPECIEIS LIST – USFWS**

### **COLORADO’S 2015 STATE WILDLIFE ACTION PLAN**

### **CRITERIA FOR ERECTING PIPING PLOVER AND INTERIOR LEAST TERN EXCLOSURES AT JOHN MARTIN RESERVOIR USACE**

### **INTERIOR LEAST TERN AND PIPING PLOVER BIOLOGICAL OPINION**

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**IPaC****U.S. Fish & Wildlife Service**

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Project information

**NAME**

John Martin Reservoir Master Plan Revision

**LOCATION**

Bent County, Colorado

**DESCRIPTION**

The

John Martin Reservoir (JMR) Master Plan (John Martin Reservoir, Bent County, Colorado) is the long-term strategic land use management document that guides the comprehensive management and development of all the project's recreational, natural, and cultural resources. Under the guidance of ER-1130-2-550 Change 7,

the Plan guides the efficient and cost-effective development, management, and use of project lands. It is a dynamic tool that provides for the responsible stewardship and sustainability of the project's resources for the benefit of present and future generations. The Plan works in tandem with the Operational Management Plan (OMP), which is the implementation tool for the resource objectives and development needs identified in the Master Plan. The Master Plan guides and articulates the USACE responsibilities pursuant to federal laws. Efforts are under way to revise the current JMR Master Plan, last revised in 1974. The Master Plan revision will update land classifications, plan for the modernization of existing parks, and inform the management of wildlife and other resource lands within USACE managed property at JMR for the next 25 years.

## Local office

### Colorado Ecological Services Field Office

(303) 236-4773

(303) 236-4005

#### MAILING ADDRESS

Denver Federal Center

P.O. Box 25486

Denver, CO 80225-0486

#### PHYSICAL ADDRESS

134 Union Boulevard, Suite 670

Lakewood, CO 80228-1807

<http://www.fws.gov/coloradoES>

<http://www.fws.gov/platteriver>

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

## Listed species

<sup>1</sup> are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

## Birds

NAME	STATUS
Least Tern <i>Sterna antillarum</i>	Endangered
No critical habitat has been designated for this species.	
<a href="https://ecos.fws.gov/ecp/species/8505">https://ecos.fws.gov/ecp/species/8505</a>	

Piping Plover *Charadrius melodus*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/6039>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service

<sup>3</sup>. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

## MIGRATORY BIRD INFORMATION IS NOT AVAILABLE AT THIS TIME

### **Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in [Birds of North America \(BNA\) Online](#) under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a [subscription](#). [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### **What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the [Endangered Species Act \(ESA\)](#).

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#). The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.



# Facilities

## Wildlife refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGES AT THIS LOCATION.

## Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

This location overlaps the following wetlands:

### FRESHWATER EMERGENT WETLAND

[PEMA](#)

[PEMC](#)

[PEMK](#)

### FRESHWATER FORESTED/SHRUB WETLAND

[PSSA](#)

[PFOA](#)

[PSSC](#)

### FRESHWATER POND

[PUSAx](#)

[PUBG](#)

[PUSCx](#)

### LAKE

[L2USK](#)



[L1UBGx](#)[L2UBGx](#)

RIVERINE

[R2UBH](#)[R2UBF](#)[R4SBA](#)[R2USA](#)[R4SBCx](#)

A full description for each wetland code can be found at the National Wetlands Inventory website:

<https://ecos.fws.gov/ipac/wetlands/decoder>

#### **Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### **Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

#### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Colorado Ecological Services Field Office  
Denver Federal Center  
P.O. Box 25486  
Denver, CO 80225-0486  
Phone: (303) 236-4773 Fax: (303) 236-4005  
<http://www.fws.gov/coloradoES>  
<http://www.fws.gov/platteriver>

In Reply Refer To:

May 14, 2018

Consultation Code: 06E24000-2018-SLI-0045

Event Code: 06E24000-2018-E-02629

Project Name: John Martin Reservoir Master Plan Revision

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Migratory Birds
  - Wetlands
-



## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Colorado Ecological Services Field Office**

Denver Federal Center

P.O. Box 25486

Denver, CO 80225-0486

(303) 236-4773

---

## Project Summary

Consultation Code: 06E24000-2018-SLI-0045

Event Code: 06E24000-2018-E-02629

Project Name: John Martin Reservoir Master Plan Revision

Project Type: LAND - MANAGEMENT PLANS

**Project Description:** The John Martin Reservoir (JMR) Master Plan (John Martin Reservoir, Bent County, Colorado) is the long-term strategic land use management document that guides the comprehensive management and development of all the project's recreational, natural, and cultural resources. Under the guidance of ER-1130-2-550 Change 7, the Plan guides the efficient and cost-effective development, management, and use of project lands. It is a dynamic tool that provides for the responsible stewardship and sustainability of the project's resources for the benefit of present and future generations. The Plan works in tandem with the Operational Management Plan (OMP), which is the implementation tool for the resource objectives and development needs identified in the Master Plan. The Master Plan guides and articulates the USACE responsibilities pursuant to federal laws. Efforts are under way to revise the current JMR Master Plan, last revised in 1974. The Master Plan revision will update land classifications, plan for the modernization of existing parks, and inform the management of wildlife and other resource lands within USACE managed property at JMR for the next 25 years.

**Project Location:**

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.0793353777992N103.02640237341538W>



Counties: Bent, CO

---

## Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Birds

NAME	STATUS
Least Tern <i>Sterna antillarum</i> Population: interior pop. No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8505">https://ecos.fws.gov/ecp/species/8505</a>	Endangered
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

---



# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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# Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

- 
1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birds and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
<b>Bald Eagle <i>Haliaeetus leucocephalus</i></b> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Jul 31
<b>Burrowing Owl <i>Athene cunicularia</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9737">https://ecos.fws.gov/ecp/species/9737</a>	Breeds Mar 15 to Aug 31

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NAME	BREEDING SEASON
<b>Cassin's Sparrow</b> <i>Aimophila cassinii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9512">https://ecos.fws.gov/ecp/species/9512</a>	Breeds Aug 1 to Oct 10
<b>Chestnut-collared Longspur</b> <i>Calcarius ornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 10
<b>Golden Eagle</b> <i>Aquila chrysaetos</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>	Breeds Jan 1 to Aug 31
<b>Hudsonian Godwit</b> <i>Limosa haemastica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
<b>Lark Bunting</b> <i>Calamospiza melanocorys</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 10 to Aug 15
<b>Lesser Yellowlegs</b> <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
<b>Lewis's Woodpecker</b> <i>Melanerpes lewis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9408">https://ecos.fws.gov/ecp/species/9408</a>	Breeds Apr 20 to Sep 30
<b>Long-billed Curlew</b> <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/5511">https://ecos.fws.gov/ecp/species/5511</a>	Breeds Apr 1 to Jul 31
<b>Semipalmated Sandpiper</b> <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
<b>Whimbrel</b> <i>Numenius phaeopus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9483">https://ecos.fws.gov/ecp/species/9483</a>	Breeds elsewhere

NAME	BREEDING SEASON
<b>Willet <i>Tringa semipalmata</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5

## Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

### Breeding Season (■)

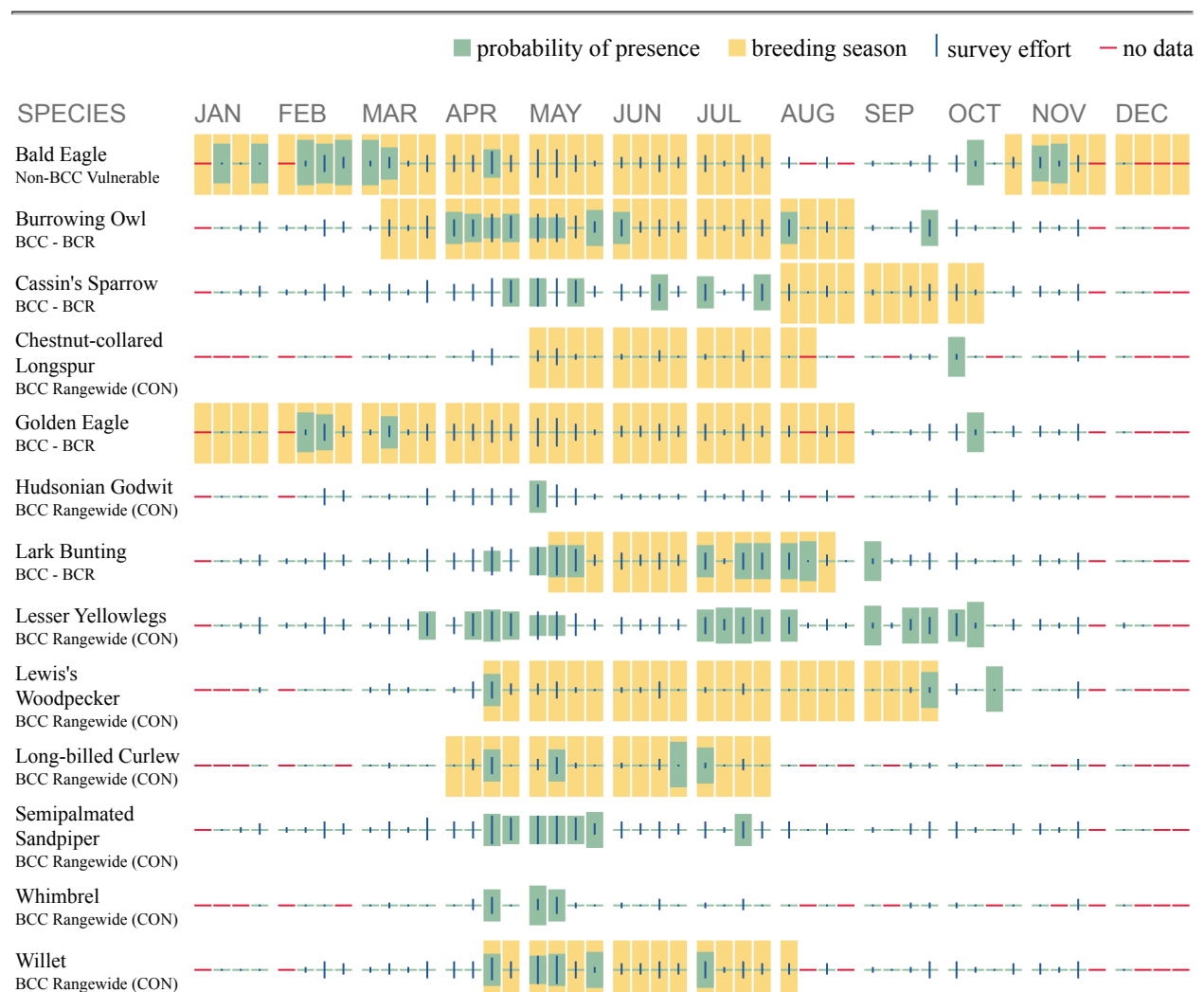
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

A week is marked as having no data if there were no survey events for that week.

## Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

## Migratory Birds FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

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The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical](#)

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[Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

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# Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

## FRESHWATER EMERGENT WETLAND

- [PEMA](#)
- [PEMC](#)
- [PEMK](#)

## FRESHWATER FORESTED/SHRUB WETLAND

- [PSSA](#)
- [PFOA](#)
- [PSSC](#)

## FRESHWATER POND

- [PUSC<sub>x</sub>](#)
- [PUSA<sub>x</sub>](#)
- [PUBG](#)

## LAKE

- [L2USK](#)
- [L1UBG<sub>x</sub>](#)
- [L2UBG<sub>x</sub>](#)

## RIVERINE

- [R2UBF](#)
  - [R2UBH](#)
  - [R4SBA](#)
  - [R4SBC<sub>x</sub>](#)
  - [R2USA](#)
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## Chapter 2: Species of Greatest Conservation Need

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This chapter presents updated information on wildlife species that are in need of conservation attention in Colorado, with a focus on native species. Colorado's first SWAP, completed in 2006, identified 210 Species of Greatest Conservation Need (SGCN). Those species were grouped into Tier 1 and Tier 2 categories, reflecting a relative degree of conservation priority. Conservation attention is still warranted for the species on the original SGCN list. However, the utility of such a long Tier 1 species list for prioritizing conservation work over the intervening years has been somewhat confounding. Thus, a primary focus of the SGCN component in this SWAP revision has been to improve the SWAP's usefulness for conservation prioritization, while continuing to recognize the broader interests and capacity of Colorado's conservation community overall. To that end, we have re-defined how we are characterizing Tier 1 and Tier 2 SGCN, and modified the criteria used to determine Tier 1 and Tier 2 status.

Also, in the interest of improving the SWAP's applicability across Colorado's conservation community, we have added a rare plant component to the plan, and retained and expanded the insect component of the SGCN list. Though CPW does not have statutory authority over plant and insect species, we recognize the crucial role these taxa play in the ecosystems and wildlife communities of the State. SWAP elements for plants and non-mollusk invertebrates are presented in Appendices A and B, respectively.

### Revised Interpretation of Tier 1 and Tier 2

Although the 2015 revision of Colorado's SWAP retains the original two-tier SGCN structure, **we have re-interpreted the Tier 1 list to represent the species which are truly of highest conservation priority in the state**, and to which CPW will likely focus resources over the life of this plan. Though the agency will certainly maintain flexibility in responding to evolving conservation needs and scientific knowledge, our best current estimate of how our work will probably be focused over the coming decade is reflected in the new Tier 1 list of 55 species. All other previously Tier 1 SGCN have been moved to the Tier 2 list, with one exception. Recent genetic studies indicate that the subspecies designation for northern pocket gopher (*Thomomys talpoides macrotis*) is not valid. Thus, this subspecies has been removed from the SGCN list. Tier 2 species remain important in light of forestalling population trends or habitat conditions that may lead to a threatened or endangered listing status, but the urgency of such action has been judged to be less. When planning future conservation work, these tier rankings should be considered along with other important factors, including potential funding and partnership

opportunities, and responsiveness to “one-time-only” opportunities. It is our hope and expectation that our conservation partners and stakeholders will work together toward conservation of all SGCN, including those on the Tier 2 list. As an agency, we remain committed to improving the status of all SGCN, and welcome collaborative efforts to do so.

## Revised SGCN Criteria

For this iteration of our SWAP, we have expanded the criteria that were used to develop the original SGCN list<sup>3</sup>, which were primarily focused on species' conservation status. Those criteria were retained and augmented by further consideration of the species' role in Colorado wildlife communities, as well as our ability to make a measurable contribution to conservation of species populations, according to the criteria listed in Table 2. In distinguishing Tier 1 and Tier 2 species in the original SWAP, we developed an additional set of sub-criteria that placed more emphasis on economic considerations<sup>4</sup>. Due to the revised interpretation of Tier 1 status, some of these criteria were deemed to be of less importance in the revised SWAP. The remaining criteria have been absorbed into the updated criteria in Table 2.

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<sup>3</sup> Listed as federal candidate, threatened or endangered species under the ESA; Classified as state endangered or threatened species, or species of special concern; Global ranking scores of G1, G2 or G3 by the Colorado Natural Heritage Program; Identified as conservation priorities through a range-wide status assessment or assessment of large taxonomic divisions; Assigned state ranking scores of S1 or S2 AND a global ranking score of G4 by the Colorado Natural Heritage Program. Species were removed from the list if they: occur peripherally in Colorado but are common elsewhere AND for which management actions in Colorado are likely to have no population-level effect; are very common but were placed on lists due to economic considerations (e.g., Mallard).

<sup>4</sup> Knowledge of management techniques needed for recovery; Impact on federal recovery; Cost of recovery or management action implementation; Direct cost of recovery action to others; Public appeal or interest in the species; Economic impacts of listing (cost incurred by listing); Importance to state biological diversity; Multiple species benefits from management of target species.

**Table 2. Criteria used to revise the list of Tier 1 Species of Greatest Conservation Need.**

<b>1) Federal and State Status</b>
a) Listed or proposed as endangered at federal or state level
b) Listed or proposed as threatened at federal or state level
c) Other indication of special concern at federal or state level
<b>2) Colorado's contribution to the species overall conservation (portion of overall range that occurs in Colorado)</b>
a) The health of the population in Colorado compared to other portions of its range (better = higher)
b) Population status and level of conservation activity in surrounding states and other portions of the species range
c) Level of conservation activity in Colorado relative to its status in the state
<b>3) Urgency of conservation action:</b>
a) New threats to the species
b) Lack of Scientific Knowledge
c) Increases in severity of existing threats or new data that show a significant, persistent decline in population status
d) Likelihood and immediacy of potential ESA listing
e) Funding or partnership opportunities that are time limited
<b>4) Ability to Implement Effective Conservation Actions:</b>
a) Few regulatory issues present to impede conservation success
b) Limitations in mitigating population and/or habitat threats are minimal (i.e., conservation success is highly likely)
c) Cost to implement effective conservation
d) Socio-political factors (general willingness to support conservation of the species)
<b>5) Ecological Value of the species:</b>
a) Species is a good indicator to the overall health of the habitat it occupies
b) Keystone species – plays a significant role in defining the habitat in which it lives
c) Umbrella species – protecting these species indirectly protects the many other species that make up the ecological community used by the species

## Updated SGCN List

The 2015 SGCN list of vertebrate animals and mollusks– the groups for which CPW has statutory authority – contains 159 species (Table 3). Fifty-five species have been identified as Tier 1 SGCN, including 2 amphibians, 13 birds, 25 fish, 13 mammals, and 2 reptiles (Table 3). Of these, all were on the Tier 1 SGCN list in 2006 with the following exceptions: White-tailed ptarmigan<sup>5</sup> and wolverine were previously Tier 2; plains topminnow, little brown bat, New Mexico meadow jumping mouse, and American pika were not SGCN in 2006. Conservation opportunity, Colorado's contribution to conservation, and changes in conservation status are all partially explanatory in these changes.

<sup>5</sup> The 2006 SWAP listed white-tailed ptarmigan as a SGCN at the species level. This 2015 SWAP lists the subspecies Southern white-tailed ptarmigan, based on the USFWS recognition of the Colorado population of white-tailed ptarmigan as a separate subspecies.

The revised Tier 2 SGCN list of vertebrates and mollusks contains 104 species, including 8 amphibians, 48 birds, 2 fish, 23 mammals, 14 reptiles, and 9 mollusks. Of the Tier 2 species, 10 vertebrates and one mollusk were not identified as SGCN in 2006. The pygmy rabbit was not a SGCN in 2006 because at that time the species had not been reported in Colorado. Recent evidence suggests that this species may be present in northwestern Colorado. The following species were not SGCN in 2006, but have been added to the 2015 Tier 2 list due to designation as a Sensitive Species by the Bureau of Land Management and/or the U.S. Forest Service: Great Basin spadefoot, black tern, grasshopper sparrow, Rocky Mountain capshell, American marten, big free-tailed bat, hoary bat, pygmy shrew, desert spiny lizard, and milksnake. Thirty bird species have been removed from the SGCN list. This change is not a result of change in species status, but rather is due to the revisions of the criteria used to define SGCN.

There are four species on the SGCN list that no longer occur as wild populations in Colorado: bison, gray wolf, grizzly bear, and wolverine. These species were historically part of Colorado's native animal community, and would meet the criteria for SGCN if they were to re-colonize or be re-introduced to the state during the time period covered by this plan. There are no plans to re-introduce wolves or grizzly bears to the state, but it is possible that wolverine and/or genetically pure, wild bison could be re-introduced if social and political concerns can be satisfactorily addressed and such efforts are biologically justified.

## Status and Trend

The status of each vertebrate and mollusk SGCN is summarized in Table 3. The lists generated by the U.S. Fish and Wildlife Service, U.S. Forest Service, Bureau of Land Management, State of Colorado, Colorado Natural Heritage Program, and NatureServe all use species status in some form to develop their respective lists. We did not develop a new metric that specifically evaluated species status within Colorado, but rather used the lists generated by these other organizations to inform our evaluation of species status.

A species' population trend is also used by other organizations in the development of their lists, but we do consider it as a separate factor here (Table 3, Declining Trend column). Both data from studies as well as best professional judgments were used to determine declining trend. Data were found in recovery plans, status assessments, and both published and unpublished reports. For landbirds we relied heavily upon the Partners in Flight Species Assessment Database (PIF Science Committee 2012) to evaluate trends on a continental scale.

**Table 3. Vertebrate and Mollusk Species of Greatest Conservation Need.**

Species are grouped by Tier and taxonomic group, and then sorted alphabetically by common name. Legend: Federal Listing: LE – listed Endangered; LT – listed Threatened; LT\* - listed Threatened status applies to Distinct Population Segment only; C – Candidate; P – Petitioned; N - Not Warranted. State Listing: SE – state endangered; ST – state threatened; SC – Special Concern. Agency Sensitive: BLM – Bureau of Land Management; USFS – U.S. Forest Service; USFWS – U.S. Fish and Wildlife Service Birds of Conservation Concern for Bird Conservation Regions 16 and 18. NatureServe Global/State Status: 1 – critically imperiled; 2 – imperiled; 3 – vulnerable; 4 – apparently secure, but with cause for long-term concern; 5 – demonstrably secure; T – subspecies status; Q – taxonomic uncertainty; B – breeding; N – non-breeding; NR – not ranked; X - extirpated. Species mark with a double-asterisk (\*\*) were added as habitat indicator species.

<i>Species</i>	<i>Common Name</i>	<i>Priority Tier</i>	<i>Federal Status</i>	<i>State Status</i>	<i>USFS Sensitive Species</i>	<i>BLM Sensitive Species</i>	<i>USFWS Birds of Conservation Concern</i>	<i>PIF US-Canada Watch List</i>	<i>CO's Contribution to Conservation</i>	<i>Urgency of Conservation Action</i>	<i>Ability to Implement Effective Conservation Actions</i>	<i>Ecological Value of the Species</i>	<i>NatureServe Global Status Rank</i>	<i>CNHP/NatureServe State Status Rank</i>	<i>Declining Trend</i>
<b>AMPHIBIANS</b>															
<i>Anaxyrus boreas boreas</i>	Boreal toad (Southern Rocky Mountain population)	Tier 1	P	SE	x	x			x	x		x	G4T1	S1	
<i>Lithobates pipiens</i>	Northern leopard frog	Tier 1		SC	x	x						x	G5	S3	?
<b>BIRDS</b>															
<i>Leucosticte australis</i>	Brown-capped rosy-finch	Tier 1					x	x				x	G4	S3B,S4N	
<i>Athene cunicularia</i>	Burrowing owl	Tier 1		ST	x	x	x					x	G4	S4B	
<i>Tympanuchus phasianellus columbianus</i>	Columbian sharp-tailed grouse	Tier 1		SC	x	x				x	x	x	G4T3	S2	
<i>Aquila chrysaetos</i>	Golden eagle	Tier 1					x			x		x	G5	S3S4B, S4N	
<i>Centrocercus urophasianus</i>	Greater sage-grouse	Tier 1	C	SC	x	x		x		x	x	x	G3G4	S4	
<i>Grus canadensis tabida</i>	Greater sandhill crane	Tier 1		SC									G5T4	S2B,S4N	x
<i>Centrocercus minimus</i>	Gunnison sage-grouse	Tier 1	LT	SC		x	x	x	x	x	x	x	G1	S1	
<i>Tympanuchus pallidicinctus</i>	Lesser prairie-chicken	Tier 1	LT	ST		x	x	x			x	x	G3	S2	

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Species	Common Name	Priority Tier	Federal Status	State Status	USFS Sensitive Species	BLM Sensitive Species	USFWS Birds of Conservation Concern	PIF US-Canada Watch List	CO's Contribution to Conservation	Urgency of Conservation Action	Ability to Implement Effective Conservation Actions	Ecological Value of the Species	NatureServe Global Status Rank	CNHP/NatureServe State Status Rank	Declining Trend
<i>Charadrius montanus</i>	Mountain plover	Tier 1		SC	x	x	x						G3	S2B	
<i>Tympanuchus phasianellus jamesii</i>	Plains sharp-tailed grouse	Tier 1		SE									G4T4	S1	
<i>Lagopus leucura altipetens</i>	Southern white-tailed ptarmigan	Tier 1	P		x							x	G5	S4	
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	Tier 1	LE	SE			x						G5T1T2	SNA	
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	Tier 1	LT*	SC	x	x	x			x			G5T3Q	S1B	
FISH															
<i>Etheostoma cragini</i>	Arkansas darter	Tier 1	C	ST		x							G3G4	S2	
<i>Catostomus discobolus</i>	Bluehead sucker	Tier 1			x	x			x	x		x	G4	S4	
<i>Gila elegans</i>	Bonytail chub	Tier 1	LE	SE					x	x			G1	SX	
<i>Hybognathus hankinsoni</i>	Brassy minnow	Tier 1		ST								x	G5	S3	
<i>Ptychocheilus lucius</i>	Colorado pikeminnow	Tier 1	LE	ST					x	x		x	G1	S1	x
<i>Oncorhynchus clarkii pleuriticus</i>	Colorado River cutthroat trout	Tier 1		SC	x	x						x	G4T3	S3	
<i>Luxilus cornutus</i>	Common shiner	Tier 1		ST									G5	S2	
<i>Catostomus latipinnis</i>	Flannelmouth sucker	Tier 1			x	x			x	x		x	G3G4	S3	
<i>Platygobio gracilis</i>	Flathead chub	Tier 1		SC	x								G5	S3	
<i>Oncorhynchus clarkii stomias</i>	Greenback cutthroat trout	Tier 1	LT	ST					x			x	G4T2T3	S2	
<i>Gila cypha</i>	Humpback chub	Tier 1	LE	ST						x			G1	S1	x
<i>Catostomus playtrhynchus</i>	Mountain sucker	Tier 1		SC	x	x							G5	S2	
<i>Phoxinus eos</i>	Northern redbelly dace	Tier 1		SE	x						x		G5	S1	
<i>Lepomis humilis</i>	Orangespotted sunfish	Tier 1									x		G5	S5	x

Colorado's 2015 State Wildlife Action Plan

Species	Common Name	Priority Tier	Federal Status	State Status	USFS Sensitive Species	BLM Sensitive Species	USFWS Birds of Conservation Concern	PIF US-Canada Watch List	CO's Contribution to Conservation	Urgency of Conservation Action	Ability to Implement Effective Conservation Actions	Ecological Value of the Species	NatureServe Global Status Rank	CNHP/NatureServe State Status Rank	Declining Trend
<i>Etheostoma spectabile</i>	Orangethroat darter	Tier 1		SC									G5	S3	x
<i>Hybognathus placitus</i>	Plains minnow	Tier 1		SE	x							x	G4	SH	
<i>Fundulus sciadicus</i>	Plains topminnow	Tier 1			x								G4	S4	
<i>Xyrauchen texanus</i>	Razorback sucker	Tier 1	LE	SE					x	x		x	G1	S1	
<i>Gila Pandora</i>	Rio Grande chub	Tier 1		SC	x	x							G3	S1	
<i>Oncorhynchus clarkii virginalis</i>	Rio Grande cutthroat trout	Tier 1	N	SC	x	x			x			x	G4T3	S3	
<i>Catostomus plebeius</i>	Rio Grande sucker	Tier 1		SE	x	x							G3G4	S1	
<i>Gila robusta</i>	Roundtail chub	Tier 1		SC	x	x			x	x		x	G3	S2	x
<i>Phoxinus erythrogaster</i>	Southern redbelly dace	Tier 1		SE	x						x		G5	S1	
<i>Noturus flavus</i>	Stonecat	Tier 1		SC						x			G5	S1	
<i>Phenacobius mirabilis</i>	Suckermouth minnow	Tier 1		SE								x	G5	S2	
<b>MAMMALS</b>															
<i>Ochotona princeps</i>	American pika**	Tier 1	N										G5	S5	
<i>Mustela nigripes</i>	Black-footed ferret	Tier 1	LE	SE						x		x	G1	S1	
<i>Myotis thysanodes</i>	Fringed myotis	Tier 1			x	x						x	G4	S3	
<i>Cynomys gunnisoni</i>	Gunnison's prairie dog	Tier 1	N		x	x			x			x	G5	S5	
<i>Myotis lucifigus</i>	Little brown myotis	Tier 1	P									x	G3	S5	
<i>Lynx Canadensis</i>	Lynx	Tier 1	LT	SE								x	G5	S1	
<i>Zapus hudsonius luteus</i>	New Mexico meadow jumping mouse	Tier 1	LE		x	x			x			x	G5T2	S1	
<i>Perognathus fasciatus</i>	Olive-backed pocket mouse	Tier 1										x	G5	S3	x
<i>Zapus hudsonius preblei</i>	Prebles meadow jumping mouse	Tier 1	LT	ST					x			x	G5T2	S1	x



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<i>Euderma maculatum</i>	Spotted bat	Tier 1			x	x						x	G4	S2	
<i>Corynorhinus townsendii pallescens</i>	Townsend's big-eared bat ssp.	Tier 1		SC	x	x					x	x	G3G4T3T4	S2	
<i>Cynomys leucurus</i>	White-tailed prairie dog	Tier 1			x	x						x	G4	S4	
<i>Gulo gulo</i>	Wolverine	Tier 1	N	SE								x	G4	S1	
REPTILES															
<i>Aspidoscelis neotesselata</i>	Colorado checkered whiptail	Tier 1	N	SC					x	x		x	G2G3	S2	
<i>Sistrurus catenatus</i>	Massasauga	Tier 1	P	SC	x	x						x	G3G4	S2	
AMPHIBIANS															
<i>Acris blanchardi</i>	Blanchard's cricket frog	Tier 2		SC		x							G5	SH	
<i>Hyla arenicolor</i>	Canyon tree frog	Tier 2				x							G5	S2	
<i>Scaphiopus couchii</i>	Couch's spadefoot	Tier 2		SC									G5	S1	
<i>Spea intermontana</i>	Great Basin spadefoot	Tier 2				x							G5	S3	
<i>Gastrophryne olivacea</i>	Great Plains narrowmouth toad	Tier 2		SC									G5	S1	
<i>Anaxyrus debilis</i>	Green toad	Tier 2											G5	S2	
<i>Lithobates blairi</i>	Plains leopard frog	Tier 2		SC	x	x							G5	S3	
<i>Lithobates sylvatica</i>	Wood frog	Tier 2		SC	x								G5	S3	
BIRDS															
<i>Botaurus lentiginosus</i>	American bittern	Tier 2			x		x						G4	S3S4B	
<i>Falco peregrinus anatum</i>	American peregrine falcon	Tier 2		SC	x	x	x						G4T4	S2B	
<i>Pelecanus erythrorhynchos</i>	American white pelican	Tier 2				x							G4	S1B	
<i>Haliaeetus leucocephalus</i>	Bald eagle	Tier 2		SC	x	x	x						G5	S1B,S3N	

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<i>Patagioenas fasciata</i>	Band-tailed pigeon	Tier 2											G4	S4B	x
<i>Bucephala islandica</i>	Barrow's goldeneye	Tier 2											G5	S2B	
<i>Leucosticte atrata</i>	Black rosy-finch	Tier 2					x	x					G4	S4N	
<i>Cypseloides niger</i>	Black swift	Tier 2			x	x		x	x				G4	S3B	x
<i>Chlidonias niger</i>	Black tern	Tier 2			x								G4	S2B	
<i>Dolichonyx oryzivorus</i>	Bobolink	Tier 2						x					G5	S3B	x
<i>Aegolius funereus</i>	Boreal owl	Tier 2			x								G5	S2	
<i>Spizella breweri</i>	Brewer's sparrow	Tier 2			x	x	x						G5	S4B	x
<i>Peucaea cassinii</i>	Cassin's finch	Tier 2					x						G5	S5	x
<i>Aimophila cassinii</i>	Cassin's sparrow	Tier 2			x								G5	S4B	x
<i>Calcarius ornatus</i>	Chestnut-collared longspur	Tier 2			x		x	x					G5	S1B	x
<i>Buteo regalis</i>	Ferruginous hawk	Tier 2		SC	x	x	x					x	G4	S3B,S4N	
<i>Otus flammeolus</i>	Flammulated owl	Tier 2			x		x	x					G4	S4	
<i>Setophaga graciae</i>	Grace's warbler	Tier 2					x						G5	S3B	
<i>Ammodramus savannarum</i>	Grasshopper sparrow	Tier 2			x		x						G5	S3S4B	x
<i>Vireo vicinior</i>	Gray vireo	Tier 2					x	x					G4	S2B	
<i>Tympanuchus cupido</i>	Greater prairie-chicken	Tier 2			x			x					G4	S3	x
<i>Baeolophus ridgwayi</i>	Juniper titmouse	Tier 2					x						G5	S4	x
<i>Calamospiza melanocorys</i>	Lark bunting	Tier 2					x						G5	S4	x
<i>Passerina amoena</i>	Lazuli bunting	Tier 2											G5	S5B	x
<i>Sterna antillarum</i>	Least tern	Tier 2	LE	SE									G4	S1B	
<i>Melanerpes lewis</i>	Lewis's woodpecker	Tier 2			x		x						G4	S4	x

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<i>Lanius ludovicianus</i>	Loggerhead shrike	Tier 2			x								G4	S3S4B	x
<i>Numenius americanus</i>	Long-billed curlew	Tier 2		SC	x	x	x						G5	S2B	
<i>Rhynchophanes mccownii</i>	McCown's longspur	Tier 2			x		x						G4	S2B	
<i>Strix occidentalis lucida</i>	Mexican spotted owl	Tier 2	LT	ST									G3T3	S1B,SUN	
<i>Colinus virginianus</i>	Northern bobwhite	Tier 2											G5	S4	x
<i>Accipiter gentilis</i>	Northern goshawk	Tier 2			x	x							G5	S3B	
<i>Circus cyaneus</i>	Northern harrier	Tier 2			x								G5	S3B	
<i>Contopus cooperi</i>	Olive-sided flycatcher	Tier 2			x			x					G4	S3S4B	x
<i>Gymnorhinus cyanocephalus</i>	Pinyon jay	Tier 2					x	x					G5	S5	x
<i>Charadrius melodus</i>	Piping plover	Tier 2	LT	ST									G3	S1B	
<i>Falco mexicanus</i>	Prairie falcon	Tier 2					x						G5	S4B,S4N	
<i>Progne subis</i>	Purple martin	Tier 2			x								G5	S3B	
<i>Selasphorus rufus</i>	Rufous hummingbird	Tier 2						x					G5	SNA	x
<i>Amphispiza belli</i>	Sage sparrow	Tier 2			x								G5	S3B	x
<i>Asio flammeus</i>	Short-eared owl	Tier 2			x								G5	S2B	x
<i>Buteo swainsoni</i>	Swainson's hawk	Tier 2											G5	S5B	x
<i>Bartramia longicauda</i>	Upland sandpiper	Tier 2					x					x	G5	S3B	
<i>Catharus fuscescens</i>	Veery	Tier 2					x						G5	S3B	
<i>Oreothlypis virginiae</i>	Virginia's warbler	Tier 2						x					G5	S5	
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	Tier 2		SC		x	x						G3T3	S1B	
<i>Plegadis chihi</i>	White-faced ibis	Tier 2				x							G5	S2B	
<i>Grus Americana</i>	Whooping crane	Tier 2	LE	SE								x	G1	SNA	

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FISH															
<i>Etheostoma exile</i>	Iowa darter	Tier 2		SC									G5	S3	
<i>Couesius plumbeus</i>	Lake chub	Tier 2		SE	x						x		G5	S1	
MAMMALS															
<i>Sciurus aberti</i>	Abert's squirrel**	Tier 2											G5	S5	
<i>Idionycteris phyllotis</i>	Allen's big-eared bat	Tier 2				x							G4	SNR	
<i>Martes Americana</i>	American marten	Tier 2			x								G4G5	S4	
<i>Nyctinomops macrotis</i>	Big free-tailed bat	Tier 2				x							G5	S1	
<i>Ovis Canadensis</i>	Bighorn sheep	Tier 2			x	x							G4	S4	
<i>Bison bison</i>	Bison	Tier 2											G4	SX	
<i>Cynomys ludovicianus</i>	Black-tailed prairie dog	Tier 2	N	SC	x	x						x	G4	S3	
<i>Thomomys bottae rubidus</i>	Botta's pocket gopher ( <i>rubidus</i> ssp.)	Tier 2		SC									G5T1	S1	
<i>Conepatus leuconotus</i>	Common hog-nosed skunk	Tier 2			x								G4	S1	
<i>Sorex nanus</i>	Dwarf shrew	Tier 2											G4	S2	
<i>Canis lupus</i>	Gray wolf	Tier 2	LE	SE	x							x	G4G5	SX	
<i>Ursus arctos</i>	Grizzly bear	Tier 2		SE									G4	SX	
<i>Lasiurus cinereus</i>	Hoary bat	Tier 2			x								G5	S5B	
<i>Vulpes macrotis</i>	Kit fox	Tier 2		SE	x	x							G4	S1	x
<i>Sorex preblei</i>	Preble's shrew	Tier 2											G4	S1	
<i>Brachylagus idahoensis</i>	Pygmy rabbit	Tier 2											G4	SNR	
<i>Sorex hoyi montanus</i>	Pygmy shrew	Tier 2			x								G5T3T4	S2	

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<i>Clethrionomys gapperi</i>	Red-backed vole**	Tier 2											G5	S5	
<i>Lontra Canadensis</i>	River otter	Tier 2		ST	x						x	x	G5	S3S4	
<i>Lemmys curtatus</i>	Sagebrush vole	Tier 2											G5	S1	
<i>Lepus americanus</i>	Snowshoe hare**	Tier 2											G5	S5	
<i>Vulpes velox</i>	Swift fox	Tier 2		SC	x	x						x	G3	S3	
<i>Lepus townsendii</i>	White-tailed jackrabbit	Tier 2											G5	S4	
<b>MOLLUSKS</b>															
<i>Ferrissia walker</i>	Cloche ancyliid	Tier 2											G4G5Q	S3	
<i>Promenetus umbilicatellus</i>	Cockerell	Tier 2											G4	S3	
<i>Anodontoides ferussacianus</i>	Cylindrical papershell	Tier 2		SC									G5	S2	
<i>Ferrissia fragilis</i>	Fragil ancyliid	Tier 2											G5Q	S1	
<i>Physa cupreonitens</i>	Hot springs physa	Tier 2											G5Q	S2	
<i>Uniomorus tetralasmus</i>	Pondhorn	Tier 2											G5	S1	
<i>Acroloxus coloradensis</i>	Rocky Mountain capshell	Tier 2		SC	x								G3	S1	
<i>Promenetus exacuouus</i>	Sharp sprite	Tier 2											G5	S2	
<i>Physa gyrina utahensis</i>	Utah physa	Tier 2											G5T2	S1	
<b>REPTILES</b>															
<i>Thamnophis cyrtopsis</i>	Black-necked gartersnake	Tier 2											G5	S2?	
<i>Lampropeltis californiae</i>	California kingsnake	Tier 2		SC		x							G5	S1	
<i>Thamnophis sirtalis</i>	Common gartersnake	Tier 2		SC									G5	S3	x
<i>Sceloporus magister</i>	Desert spiny lizard	Tier 2				x							G5	S2	
<i>Gambelia wislizenii</i>	Long-nosed leopard lizard	Tier 2		SC		x							G5	S1	

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<i>Rhinocheilus lecontei</i>	Long-nosed snake	Tier 2											G5	S1?	
<i>Crotalus oreganus concolor</i>	Midget faded rattlesnake	Tier 2		SC		x							G5T4	S3?	
<i>Lampropeltis triangulum</i>	Milksnake	Tier 2				x							G5	S2?	
<i>Rena dissectus</i>	New Mexico threadsnake	Tier 2		SC									G4G5	S1	
<i>Hypsiglena chlorophaea</i>	Desert nightsnake	Tier 2											G5	S3	
<i>Phrynosoma modestum</i>	Round-tailed horned lizard	Tier 2		SC									G5	S1	
<i>Tantilla horbartsmithi</i>	Smith's black-headed snake	Tier 2											G5	S2?	
<i>Phrynosoma cornutum</i>	Texas horned lizard	Tier 2		SC									G4G5	S3	
<i>Kinosternon flavescens</i>	Yellow mud turtle	Tier 2		SC									G5	S1	

## **Criteria for Erecting Piping Plover and Interior Least Tern Enclosures at John Martin Reservoir (JMR)**

Prepared by: Brian Dreher – Senior Wildlife Biologist, Colorado Parks and Wildlife,  
and U.S. Army Corps of Engineers

February 3, 2015

The US Army Corps of Engineers (Corps) conducted a formal section 7 consultation with the USFWS in 2001. Following this consultation, a biological opinion (BO) was issued (Appendix A), dated September 25, 2001. The BO covered the impacts to the federally-listed Interior Least Tern and Piping Plover associated with the Corps' lease transferring recreation and surface water management to Colorado State Parks and construction of recreational facilities at John Martin Reservoir. It is the ultimate responsibility of the Corps to comply with all Conservation Measures and Terms and Conditions specified in the BO for the protection of the Piping Plover and Interior Least Terns on their lands. The BO also directed the Corps to draft a management plan, which was completed on May 22, 2002 (Appendix B). According to the Management Plan, it is the responsibility of the Corps to enact or ensure, in coordination with Colorado Division of Wildlife (now Colorado Parks and Wildlife; CPW), that area closure signage, buoys and connecting rope barriers will be installed in high visitation areas, where practical, to deter public access to nesting areas. The Corps or the CPW determines the location of nesting areas and closes the same. Barricades and/or temporary fencing might also be utilized to protect these areas for both Piping Plovers and Interior Least Tern. In addition, the Corps and CPW will place buoys and signs in the water adjacent to the closed areas. The main purpose of the closures are to avoid harassing, harming or taking of an Interior Least Tern or a Piping Plover.

Both agencies have mandates to protect both these species. In addition, it's important that CPW also serve its mission to provide recreational opportunities to its public as well. Given this, it is important that both agencies be of common understanding of when a closure to protect Piping Plovers and Least Terns should be initiated to protect nesting habitat. Therefore, the intent of this document is to outline the nesting behavior observed to initiate the placement of a closure.

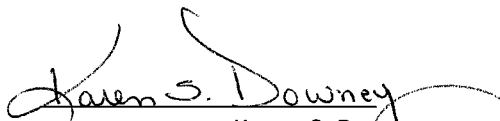
The presence of a Piping Plover or Least Tern in upland habitat is the first indication that nesting is going to occur. Outside of the nesting season, Piping Plover are shore birds that are exclusively found at the water's edge. Given this, action should be initiated when this is observed.

### Criteria and associated action:

- The presence of a Piping Plover in upland habitat that is suitable for nesting, is a good sign that a nest may be initiated.
  - In an instance that a single Piping Plover or Least Tern is observed in upland habitat that is suitable for nesting, closure signs will be placed in the area, but no twine will be used to form an enclosure.
  - In the event that the plover or tern is not sighted within the area of the closure in two days, the signs will be removed at the discretion of the Corps' Lake Operations Manager.


- The presence of two Piping Plovers or Least Terns in upland habitat exhibiting signs of courtship behavior (aerial displays of a male over his territory, tilt display by the male, copulation, or stone tossing)
  - A closure will be constructed around this area that includes both signs and twine marking the perimeter.
- The identification of a nest
  - A closed area will be constructed around the location of the nest site using both signs and twine marking the perimeter.
  - Closures will remain in place until the nest has fledged young. In the event that a nest within a closure area has failed, closures will remain in place for 7 days to allow for a renesting attempt.
  - Fledging closures may be different in location and/or spatial extent from nesting closures.
    - Fledging closures will be placed in areas that hatched birds move to, if outside nesting closure areas.
    - Fledging closure will be taken down when all fledged birds have been absent from the closure area for 2 consecutive days.
    - Expansion of an existing nesting closure may constitute a fledging closure.
- All new closures and changes to existing closures will be communicated to both CPW and the Corps the day they are built.
- Any disagreement regarding closures will be resolved by telephone conference between the Corps' John Martin Reservoir staff, Albuquerque District Environmental Resources Section, and CPW staff.

24 Mar 15  
Date



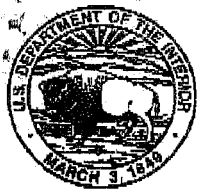
Karen S. Downey  
Operations Manager, John Martin Reservoir  
U.S. Army Corps of Engineers  
Albuquerque District

24 Mar. 15  
Date



Travis Black  
Area Wildlife Manager, Area 12  
Colorado Parks and Wildlife  
State of Colorado





## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Ecological Services  
Colorado Field Office  
755 Parfet Street, Suite 361  
Lakewood, Colorado 80215

IN REPLY REFER TO:  
ES/GJ-6-CO-01-F-041  
Mail Stop 65412

SEP 25 2001

Mark Harberg  
Chief, Environmental Resources Branch  
Albuquerque District, U.S. Army Corps of Engineers  
4101 Jefferson Plaza, NE  
Albuquerque, New Mexico 87109-3435

Dear Mr. Harberg:

In accordance with Section 7 of the Endangered Species Act (Act) as amended (16 U.S.C. 1531 et seq.) and the Interagency Cooperative Regulations (50 CFR 402), this is the U.S. Fish and Wildlife Service's (Service) biological opinion on impacts to federally-listed endangered and threatened species associated with a U.S. Army Corps of Engineers (Corps) lease transferring recreation and surface water management at the John Martin Dam and Reservoir Project (hereafter the John Martin Project), Bent County, Colorado, to Colorado State Parks (CSP) and the related construction of recreation facilities (Figures 1 and 2). Your request for formal consultation was received by the Service on July 10, 2001.

This biological opinion is based on the proposed action as described in the Corps' "Biological assessment of a lease agreement that will transfer management of several recreation areas and surface water from the U.S. Army Corps of Engineers to Colorado State Parks, at the John Martin Dam and Reservoir Project, Bent County, Colorado" (BA). The Service concurs with the Corps' determination that the proposed project is likely to adversely affect the endangered interior population of the least tern, *Sterna antillarum*, and the threatened piping plover, *Charadrius melodus*.

### CONSULTATION HISTORY

The interior population of the least tern was federally-listed as endangered in 1985. The piping plover was federally-listed as threatened in 1986. Annual monitoring and research on these two species has been conducted at the John Martin Project since 1989. We received a Draft Environmental Assessment (Draft EA) for the proposed action with your April 6, 2001, letter requesting Service comments. Our concerns regarding potential adverse effects of the proposed action on least tern and the piping plover lead to an interagency meeting at the John Martin Project on May 25, 2001. Thereafter, you forwarded the Corps' BA to the Service with a letter dated July 9, 2001. In that letter you determined that the proposed action is likely to adversely affect the least tern and the piping plover, and you requested initiation of formal consultation under the Act. Subsequent e-mail correspondence between Peter Plage of my staff and Champe Green of your staff, and an interagency telephone conference call on August 30, 2001, provided additional details of the proposed action and a discussion of additional measures to conserve the least tern and the piping plover.

## BIOLOGICAL OPINION

This biological opinion is based on information regarding cumulative effects, conditions forming the environmental baseline, the status of the least tern and the piping plover, and the importance of the John Martin Project to the survival and recovery of the species. The data used in this biological opinion constitutes the best scientific and commercial information currently available.

### Description of the Proposed Action

The Corps is entering into a lease arrangement with CSP for the recreational management of portions of the Corps' John Martin Project. In addition, CSP is offering to construct new facilities and rehabilitate existing infrastructure. The lease agreement will allow further development of recreational facilities at the Lake Hasty Recreation Area, Sandstone Recreation Area, and Overlook Recreation Area, and will transfer management of these areas and the reservoir surface water to CSP. No net increase in visitor days of recreational use of the John Martin Project is projected due to the remoteness of the project and the closing of primitive camping on the north shore.

Plans call for two construction phases that provide new facilities and rehabilitation of existing infrastructure. Ground breaking for components of Phase I construction will commence as soon after October 1, 2001, as possible (with the same effective date for CSP's management of the leased areas and surface water) and will be completed by Memorial Day weekend, 2002. Proposed Phase II construction will be completed as funding becomes available. The proposed lease agreement will be for a term of 25 years and will be renewable.

The CSP's Phase I proposal provides for the development and construction of a visitor center complex and four designated day-use areas, including minor realignment of access roads in the Sandstone Recreation Area, and for the construction of a new campground in the Overlook Recreation Area (Figure 4). The visitor center complex will cover about 4.1 acres. Below the dam, at the existing Lake Hasty Recreation Area, preliminary Phase I plans will provide for 35 new campsites and upgrades to the 65 existing campsites, new day-use picnic areas, and group use areas (Figures 2 and 3). Realignment of certain roadways both above and below the dam will enhance public safety and provide for control of vehicular movement and efficient traffic flow. No changes will be made to the road across the John Martin Dam crest or to Bent County Road 25.75 that travels below the dam through the Lake Hasty Recreation Area to the community of Caddoa. Work at the four designated day-use areas will disturb about 3.2 acres of land. A benefit in constructing the designated day-use areas and roadways will be that vehicles will be required to use only those areas and roads and will be prohibited from unrestricted driving and parking in what is now primitive camping area on the north shore. This will allow the local vegetation to recover from the existing traffic and unrestricted use.

In the Sandstone Recreation Area (Figures 2 and 4), CSP's Phase I plans call for the construction of a protective rock breakwater near the Caddoa boat ramp, increasing the launching ramp incline of the boat ramp for easier boat launching and recovery, and the upgrade of existing parking areas.

At the Overlook Recreation Area (Figures 2 and 4), Phase I construction includes the development of two new camping area loops with 25 campsites per loop, on the east side of the existing access road to the day-use area. Each campground loop will occupy approximately 15 acres. Phase II construction includes the development of a third new camping area west of the existing road with a total of 50 campsites. The new Overlook Recreation Area campground will occupy land that is mostly undisturbed and construction will disturb about 50 acres of public land. Existing facilities at the Overlook day-use area will also be rehabilitated in Phase II.

Access to reservoir areas west of the Waterfowl Closure Line (Figures 2 and 4) on the north shore will remain open to the public via the Overlook Recreation Area access road; however, recreationists wishing to access those areas to the west will need to stop at the new visitor center and notify CSP personnel of their intentions. Reservoir areas further west will remain accessible via U. S. Highway 50 and/or Bent County Roads such as County Road JJ.

Additional details of proposed construction (including equipment and materials used, stockpiling areas, soil stabilization, clean up and revegetation, and location of borrow and disposal sites) are included in the Corps' BA.

Based on discussions with the Corps subsequent to the BA, the Service has described the action area for the proposed action to include the entire John Martin Project for reasons described in the "Effects of the Proposed Action" sections of this biological opinion. The proposed action extends to the management of recreational use of the John Martin Project and construction of facilities related to the CSP lease, but does not include the operations of the reservoir in regard to water levels. Current reservoir operations follow the plan adopted by the Arkansas River Compact Administration in 1980, as amended.

### Conservation Measures

Actions in the project description that the project proponent will implement in order to reduce impacts of the action or further the recovery of threatened and endangered species are known as conservation measures. As part of the proposed action, the beneficial effects of these conservation measures are taken into consideration in the jeopardy and incidental take analyses. Conservation measures are part of the proposed action and their implementation is required under the terms of this consultation. The following conservation measures were proposed to reduce potential for impacts to the least tern and piping plover at the site. The Corps' Albuquerque District will enact or ensure the following, in coordination with CSP and the Colorado Division of Wildlife (CDOW):

1. A database on the least tern and the piping plover at the John Martin Project is being established that links geospatial data on nest locations with attribute data such as nesting habitat substrate and outcome of nesting attempts (including predation incidents, weather events, predator exclusion efforts, number of fledglings). Such a database will aid in identifying habitat preferences and directing future recovery efforts for the least tern and the piping plover.
2. Mandatory attendance will be required of contractors, sub-contractors and employees involved in park construction activities at a short presentation on the Act, awareness of the presence of the least tern and the piping plover at the John Martin Project, and the importance of protecting the birds and their habitat, before commencing work on land owned by the Corps. The above information will be prepared in written form by a CDOW biologist. The information will be included as an item in all construction bid documents, in the construction contracts, and will be discussed in all pre-construction meetings.
3. CSP contractors will be required to adhere to erosion and sediment control "best management practices," specifically the use of silt fences and sediment basins during soil disturbance, and the isolation and removal of soil contaminated with fuel or other hazardous waste.
4. Education of park visitors will be a primary management method in deterring people from disturbing the least tern and the piping plover. Pamphlets and verbal briefings regarding the presence of endangered species will be given to registering campers at entrances; a web page with a section explaining the presence of and laws protecting the least tern and the piping plover at the John Martin Project will be created; and, a portion of the proposed visitor center display area will contain information on the least tern and the piping plover. An information kiosk and

wayside exhibit are proposed for the Lake Hasty Recreation Area to further educate visitors on the life history and habitat needs of the least tern and the piping plover. Information will include identification, status, the importance of these birds to the ecosystem, nesting habitat and times, the need for closures to protect habitat and nests, fines and penalties for harassing, harming or taking a least tern or a piping plover, as well as who to contact to report a violation of a closure or the spotting of a nest or bird.

5. It is anticipated that the proposed visitor center and Hasty Campground Entrance Station will be staffed from 8 am to 10 pm every Friday, Saturday, and night before a Holiday and staffed from 8 am to 8 pm Sunday through Thursday from the middle of May through Labor Day. Each staff member will be trained to verbally respond to questions regarding the least tern and the piping plover and to give out information on any existing closures.

6. Information on the least tern and the piping plover will be incorporated into the State Park Interpretive/Environmental Education Plan. Interpretive programs given by CSP staff, CDOW staff, and volunteers will also include information on the least tern and the piping plover.

7. Continued weekly monitoring of least tern and piping plover nest locations will occur each spring and summer in cooperation with CDOW.

8. Area closure signage and buoys (reflective for night visibility and at distance intervals plainly obvious to the public, i.e., no greater than 100 ft. intervals between buoys on water and no greater than 50 ft. intervals between signs on land.) and connecting rope barriers will be erected, as appropriate, in high visitation areas to deter public access to nesting areas. When the CDOW determines the location of nesting areas and closes the areas, CSP will sign and patrol the land approaches within the leased-land area of this proposed Federal action. Barricades and/or temporary fencing may also be utilized to protect nesting areas depending on circumstances (high use area vs. minimal use area, land features, etc.). CSP will also buoy, sign, and patrol water approaches to closed nesting areas along mainland and island shorelines of the entire reservoir. CSP will provide the signs, buoys, barricades, and/or fencing for the closures as well as the staff to install them. Frequent patrol of least tern and piping plover nesting and brooding habitats will occur during the period of late April to late August, as well as rigorous enforcement of Federal and State laws pertaining to harming, harassing, or taking federally-listed and/or State-listed endangered species, including strict enforcement of pet leash laws. Additional patrols of land and water approaches to nesting areas will be made on Memorial Day and July 4th weekends when peak visitation occurs concurrent with peak nesting and/or brooding activities of the least tern and the piping plover. CDOW will notify CSP whenever it is appropriate to re-open closed areas of the leased property; CSP will remove all signs, buoys, barricades and/or fencing.

9. All staff (maintenance, administrative, interpretive, volunteers) will be trained to observe the closure areas and to report any violations of the closure to a peace officer at the park.

10. Predator exclusion cages, temporary electric mesh fences, or other fences (i.e., hardware cloth, 2"x4" wire mesh, drift fences and pit traps) will be erected where appropriate to protect nesting or brooding least terns or piping plovers, and predator removal may be conducted when such action is warranted in the opinion of professional wildlife biologists from the Corps or CDOW.

11. Vegetation removal at historical, existing, and potential nesting areas will occur when deemed appropriate by Corps or CDOW professional wildlife biologists and CSP.

12. CSP is mandated by Colorado Executive Order D00699 to manage noxious weeds and develop and implement an integrated weed management plan. An integrated weed management plan for the areas leased by CSP will be developed and implemented, and it will be the State's

responsibility to monitor and treat the leased property for invasive nuisance species. All control treatments (chemical, biological, etc) will be done in accordance with applicable Federal and State laws. Application will be done by State certified pesticide applicators when required, and control plans will be submitted to the Corps' Albuquerque District for review and approval.

13. During the interagency conference call of August 30, 2001, the Corps agreed that, prior to April 1, 2002, the Corps will formalize a management plan for the least tern and the piping plover at the John Martin Project. The plan will define the roles of the Corps, CSP, CDOW, and other entities in conservation of these species. It will address monitoring, closures, and enforcement, as well as management of breeding habitat, issues of predation, and other aspects of management.

### **Status of the Least Tern and the Piping Plover**

#### Least tern

Unless otherwise noted, the following information is from the "Recovery plan for the interior population of the least tern (*Sterna antillarum*)" (U.S. Fish and Wildlife Service 1990). The interior population of the least tern was federally listed as an endangered species in 1985. Formerly distributed throughout riverine habitats across the Great Plains, the least tern now occupies scattered remnants of its former range. Where they still occupy riverine breeding habitat of the Missouri River and its tributaries, the Arkansas and Red River systems, and the Rio Grande, they are generally limited to segments that are not affected by impoundments or channelization.

During 1997 there were an estimated 5,412 least terns widely scattered across the interior of the United States. An analysis of least tern population data for 1986-1995 for the entire range indicated an overall positive trend. The trend for the entire population was influenced by a relatively strong positive trend on the lower Mississippi River where more than half of the interior least terns nest.

Storage and supply of water for irrigation, power generation, and navigation has altered the natural hydrograph to which the interior least tern's breeding season was historically adapted. High flow periods may now extend into the normal nesting period, thereby reducing the quality of existing nest sites and forcing interior least terns to initiate nests in poor quality locations. Extreme fluctuations can flood existing nests, inundate potential nesting areas, or dewater feeding areas.

#### Piping plover

Unless otherwise noted, the following information is from the "Revised recovery plan for piping plovers (*Charadrius melodus*) breeding on the Great Lakes and northern Great Plains (U.S. Fish and Wildlife Service 1994)." The piping plover was federally listed in 1985, as threatened in the northern Great Plains and Atlantic Coast and endangered in the drainages of the Great Lakes.

The historical breeding distribution of the northern Great Plains population of the piping plover included beaches and sandbars of the prairie rivers and alkali wetlands from Alberta, Canada, south to the Texas Panhandle and east to Iowa (U.S. Fish and Wildlife Service 1988). Currently, piping plovers are widely distributed in small populations across their breeding range. The majority of adults are found in the Great Plains while the number of birds and breeding sites on the Great Lakes remains small.

The current breeding range for the Great Plains extends from alkali wetlands in southeastern Alberta through southern Saskatchewan and Manitoba to Lake of the Woods in southwestern

Ontario and northwestern Minnesota, south along major prairie rivers including the Yellowstone, Missouri, Niobrara, North Platte, Platte, and Loup Rivers, reservoirs in southeastern Colorado, and alkali wetlands in northeastern Montana, North Dakota, and South Dakota. Occasional breeding has occurred in Oklahoma and northern Saskatchewan.

Most nesting sites on the prairies that have been monitored for 10 years or more have experienced a decline; with an overall decrease of 13 percent between 1987 and 1991 (Haig and Plissner 1992). Ryan et al. (1993) developed a stochastic population growth model, using empirical, demographic data and indicated that the Great Plains piping plover population is declining 7 percent annually. Unchecked, this decline would result in extirpation of the species in approximately 80 years."

The piping plover was listed because of a substantial decline in the species and its habitat, shrinkage of the breeding range, and continued threats to the species, its habitat and range. Threats to the species in the Great Plains include the historic and continued enormous loss of appropriate sandy beaches and other littoral habitats due to recreational and commercial development; damming and channelization of rivers; withdrawal of water for irrigation and other purposes; the drainage and modification of Great Plains wetlands; predation; trampling by large confined herds of cattle; human disturbance from recreational use of rivers, alkali wetlands, and bare, alluvial islands.

### Environmental Baseline

The John Martin Project is located on the Arkansas River in Bent County, on Colorado's eastern plains. Historically, riparian vegetation along the Arkansas River has consisted of plains cottonwood, sandbar willow, and, less extensively, peach-leaf willow. The cottonwoods, some of which grow to great sizes, grow in dispersed groves along the banks and on islands in the river, and generally have lacked a shrub understory. In a few locations, sandhill plum, wild grapes, and other shrubs also occur. During the early- and mid-1900's tamarisk (salt cedar) colonized much of the flood plain of the lower Arkansas River in Colorado. Another non-native tree, Russian olive was also introduced around this time and is colonizing riverbanks.

The native plant community outside the Arkansas River flood plain is comprised of short, prairie grasses that are utilized primarily as rangeland for grazing livestock, although there is also a significant amount of dryland farming. Common prairie grass species include blue grama, side-oats grama, buffalo grass, galleta, alkali sacaton, sand dropseed, western wheatgrass, and three-awn. Throughout the lower Arkansas River Valley agricultural land predominates, often directly abutting the restricted riparian corridor and river channel.

The Arkansas River, in modern times, has become a perennial river that has highly fluctuating annual and seasonal flows due to varying runoff from winter snow-pack in the mountains, thunderstorms, and periodic droughts. Today, the river is very highly regulated for agricultural purposes and the John Martin Project is a temporary storage facility for the conservation of irrigation water. The conservation pool for storage rises to an elevation of 3,851 ft. MSL. The flood storage pool to protect lives and property downstream rises to an elevation of 3,870 ft. MSL. Storage up to the conservation pool level is authorized by the Arkansas River Compact. The Corps has management responsibility in the 19 ft. storage capacity between conservation and flood pool volumes.

For approximately the last 15 years, the majority of John Martin Project land upstream of the dam has been leased to CDOW for wildlife conservation. Livestock grazing on John Martin Project land has not occurred since that wildlife lease was initiated. Hunting is prohibited in all recreation areas at the John Martin Project including all areas downstream of the dam and areas upstream of the dam and east of the wildlife closure line (Figure 2). CDOW posts the hunting

closure areas seasonally during the migratory bird season.

Conservation efforts at the John Martin Project to protect the least tern and the piping plover are currently coordinated between the Corps, CDOW, and the Service, with other entities such as the Rocky Mountain Bird Observatory at times offering support. Conservation efforts include monitoring, research, and temporary closures to public access. Portions of John Martin Reservoir are temporarily closed to public access seasonally as the birds select habitat that is utilized for mating, nesting, and brooding. For many years the Corps has had a lease agreement with the CDOW for management of the reservoir's surface water and management of much of the land upstream of the dam for wildlife conservation. CDOW's wildlife conservation management includes enforcement of wildlife and other regulations. While the lease with CDOW excludes the Sandstone and Overlook recreation areas, temporary wildlife closures are sometimes imposed in those areas for protection of migratory birds, including the least terns and the piping plover.

Annual monitoring and research has been conducted and documented by Duane Nelson, currently with CDOW, and others since 1989. Conservation efforts have included habitat construction, such as modifications that were made to an island now known as Three Pole Island (Nelson 1998). Three Pole Island is located northwest of the Overlook Recreation Area and east of the waterfowl closure line.

Least terns use the John Martin Project for breeding, nesting, brooding, and fish foraging. Least terns typically arrive at John Martin beginning in late April through early June, and adults and fledglings usually remain until early September. Least terns utilize sparsely vegetated or unvegetated shorelines along South Beach, and the shorelines and islands near Sandstone and Overlook recreation areas on the north shore of the reservoir for breeding, nesting, and brooding (Figure 5). Nests are shallow and inconspicuous depressions in open, sandy areas, gravelly patches, or exposed flats.

Least terns feed on a wide variety of small fishes found in shallow waters. Besides feeding at the reservoir, least terns have been seen foraging at Lake Hasty, immediately below the dam, which is adjacent to the Lake Hasty Recreation Area and campground; however, they do not appear to be disturbed by the presence of campers, vehicles, swimmers, and fisherman while foraging.

Plovers arrive in mid-April at the John Martin project. Plovers also utilize sparsely vegetated or unvegetated shorelines along South Beach, and the shorelines and islands near Sandstone and Overlook recreation areas on the north shore of the reservoir for breeding, nesting, and brooding (Figure 5). Egg laying generally commences the second or third week of May. Nest scrapes are shallow depressions often lined with small pebbles.

Piping plovers feed in the intertidal portions of the beaches and shorelines at the John Martin Project. Dipteran larvae, beetles and other insects, crustaceans, and mollusks form the bulk of the bird's diet (Mitchel et al. 2000).

Table 1 below enumerates nests and fledglings by species by year during the period 1989-2001 (adapted from Nelson 2000, D. Nelson, CDOW, pers. com. 2001). See Figure 5 for locations of nests of least tern and the piping plover for the same time period.

**Table 1. Nesting and recruitment of the interior least tern and the piping plover at John Martin Reservoir, Bent Co., Colorado, 1989-2000.**

Year	Species				Remarks
	Interior Least Tern	Piping Plover			
	# Nests	# Fledged	# Nests	# Fledged	
'89	2	Unknown	1	Unknown	
'90	1	Unknown	2	Unknown	
'91	1	Unknown	-	-	
'92	-	-	1	0	Use of Predator resistant cages
'93	-	-	1	3	
'94	-	-	3	0	
'95	-	-	3	0	
'96	17	28-31	3	3	All veg. cut and removed at Three Pole I. prior to breeding season
'97	8	0	1	3	Translocation of plover nest from Gravel I. To South Beach
'98	9	10	2	0	Augmentation of a natural rise at Finger Island
'99	11	23	1	4	
'00	15	23	4	5	Use of Predator resistant cages Veg. cut and removed on Three Pole I. Prior to nesting
'01	(?)	16	(?)	6	

### Effects of the Action

Within the areas to be managed by CSP, recreational users, their pets, or even construction workers could trespass (despite written and verbal briefings) through restricted area signs, rope barriers, and buoys, and into the nesting areas. This could lead to illegal harm or harassment of eggs or birds by unleashed pets, harassment or trampling of nests by humans, attraction of predators to nests by human scent or food scraps, destruction or harassment by ATVs (prohibited within areas managed by CSP), or by beaching of personal watercraft. Similar impacts to the least tern and the piping plover could occur in newly established nesting areas prior to the areas being located or posted.

While the extent is not clearly known, impacts to the least tern and the piping plover as described above have occurred in the past at the John Martin Project and, despite conscientious execution of conservation measures proposed, there is potential for such adverse impacts to occur in the future.

Direct effects of the proposed action include the possible disturbance of breeding and/or nesting activities from Phase I construction after arrival of least terns and piping plovers during the spring of 2002 and from Phase II construction activities in the future near the Overlook and Sandstone recreation areas. Depending on the level of the reservoir, areas of use by the least tern and the piping plover would vary in distance from construction activities including the Overlook Recreation Area campground, the boat ramp site at Sandstone Recreation Area, and the breakwater near the Sandstone Recreation Area boat ramps. Likely shoreline nest sites of both the least tern and the piping plover could be as close as 100 feet at highest water level (however, at such levels existing upland trees and herbaceous vegetation may render the shorelines unacceptable as nesting habitat), or as far away as 1200 feet or more at the "conservation pool" water level.

### Indirect effects

Indirect effects of the proposed action are likely to include those related to the displacement of



current users from areas where recreation will be managed by CSP. This concern was referenced in the Corps' Draft EA. When CPS restricts access and charges users at Sandstone and Overlook recreation areas, recreational use is likely to increase within other portions of the John Martin Project and, in particular, at the popular South Beach area. In these areas it is likely that no entrance fees will be charged, vehicle access to the water's edge will be generally allowed, and some other restrictions present in areas under CSP management will not be imposed.

The South Beach area currently receives significant recreational use, especially on weekends and holidays, and has in the past been a source of problems including: unattended campfires; unleashed pets; refuse/trash dumping; illegal dumping of grey water and sewage by recreational vehicles; accidents involving unsafe use of jet skies, motorcycles, and all-terrain vehicles; fireworks; and alcohol consumption. While these activities currently exist, they may be intensified if extended as traditional recreational users are displaced from these CSP-managed areas. Since least terns and, to a greater extent, nesting piping plovers utilize the South Beach, adverse impacts to the least tern and the piping plover from recreational use (similar to those described above as direct impacts) are likely to increase at the South Beach area. Similar increases in recreational use and potential for adverse impacts could occur throughout the John Martin Project in shoreline areas not managed by CSP.

#### Interdependent effects

A memorandum of understanding between the Corps and CSP signed May 15, 2000, included an agreement that "the Corps and State agree in principle to work together in a cooperative and coordinated effort to improve the operations and management of the natural resources and recreational development of John Martin Reservoir for the greater benefit and enjoyment of the general public." For many years the Corps has had a lease agreement with the CDOW for management of the reservoir's surface water and management of much of the land upstream of the dam for wildlife conservation. CDOW's wildlife conservation management includes enforcement of wildlife and other regulations. As a result of the proposed lease action, CDOW will no longer manage the surface water area of the John Martin Project and the management of the reservoir's surface water will pass to CSP. While the change from CDOW to CSP management may be largely positive for the least tern and the piping plover due to an increase in total agency personnel available, breeding least terns and piping plovers are dependent both on surface waters, to be managed by CSP, and land areas, to be managed by CDOW. Added coordination among agencies will be required to effectively conserve these species. The Corps will be instrumental in assuring that effective coordination occurs.

Because of the added coordination required among agencies, and the potential for shifts in recreational users to impact the least tern and the piping plover (see "Indirect effects" above), the Service concludes that the appropriate project area affected by the proposed action is the entire John Martin Project and that all effects on the least tern and the piping plover relating to recreational use at the John Martin Project are interdependent effects stemming from the proposed action. In recognition of this the Corps has committed to development of a management plan for the least tern and the piping plover for the entire John Martin Project (see conservation measure 13).

#### Cumulative Effects

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The Service has not identified other actions, consistent with the definition of cumulative effects above, that are likely to affect the least tern and the piping plover within the project area.

### Conclusion

It is the Service's biological opinion that neither the direct, indirect, or interrelated effects of the proposed project (which includes the implementation of conservation measures agreed to by the Corps and outlined in this biological opinion) will jeopardize the continued existence of the interior population of the least tern or the piping plover. Although the project will likely adversely affect the least tern and the piping plover at the John Martin Project, the proposed action and conservation measures will avoid the likelihood of jeopardy to these species. No critical habitat, or proposed critical habitat for these species will be affected.

### INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavioral patterns that include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The Service anticipates that the following number of individuals could be taken as a result of the proposed action:

- Death or harm of up to two of the following in any combination in any 5-year period: individual adults or fledged young of least terns or piping plovers; or individual clutches of eggs or broods of young of least terns or piping plovers.

Coverage of this incidental take statement extends to the Corps, and to CSP and CDOW consistent with any lease or formal agreement between the Corps, and CSP or CDOW. It also extends to construction authorized by the Corps under this action. This take statement does not change take prohibitions for others including recreational users of the John Martin Project, whether take is intentional or incidental to their actions.

### Reasonable and Prudent Measures

The measures described below are non-discretionary, and must be undertaken by the Corps so that they become binding conditions of any lease or agreement with CSP, and CDOW as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has the continuing duty to regulate the activity covered by this incidental take statement. If the Corps fails (1) to assume and implement the terms and conditions or (2) to require CSP, and CDOW as appropriate, to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the lease or agreement, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take the Corps, in conjunctions with CSP and CDOW as appropriate, must report the progress of the action or its impact on the two species to the

Service as specified in the incidental take statement.

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take on the least tern and the piping plover:

1. The Corps will monitor the extent of construction activities to assure that they do not exceed the authorized area.
2. Should least tern or piping plover nesting occur in the vicinity of ongoing or planned construction that is part of this action, the Corps will take appropriate measures to reduce the impacts of take.
3. The Corps will ensure that proposed conservation measures identified in this opinion, as further refined by the terms and conditions below, are adopted and their success monitored.
4. The Corps will provide updates on the status of the least tern and the piping plover at the John Martin Project to the Service on a yearly basis.

#### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring. These terms and conditions are non-discretionary.

1. A report documenting pre-construction and post-construction conditions (including photographs), with emphasis on the boat launch ramp and jetty site at the Sandstone Recreation Area, and portions of the campground closest to the water at the Overlook Recreation Area will be forwarded to Service by the Corps or CSP following completion of Phase I construction. A similar report will be completed following completion of Phase II construction.
2. Construction work in or near least tern or piping plover breeding areas will be supervised at all times by an onsite individual from the Corps, CSP, or an authorized representative.
3. Should nesting of least terns or piping plovers be observed in the vicinity of commencing or ongoing construction described as part of this proposed action, a qualified Corps, CDOW, Service, or other wildlife biologist familiar with the least tern and the piping plover will recommend appropriate measures to eliminate or reduce adverse impact to nesting. Construction activities will be modified consistent with those recommendations.
4. Following each nesting season a report regarding least tern and piping plover activity at the John Martin Project will be prepared by the Corps, or another appropriate entity, and forwarded to the Service prior to December 1 of that year. The report will describe nesting activities, nesting success, sources of mortality or predation, and any incidental take covered by the Incidental Take Statement of this biological opinion. The report shall include appropriate recommendations to improve management and conservation of the least tern and the piping plover at the John Martin Project and shall document results of ongoing management efforts.
5. In the event that a least tern or piping plover is killed or injured or a nest of either species is destroyed as a result of construction activities resulting from the proposed action, or in conjunction with recreation use of the John Martin Project, the Colorado Field Office of the Service (303)275-2370 and the Senior Resident Agent, Law Enforcement (303)247-3560 will be contacted within 24 hours.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take (death or harm of up to two of the following in any combination in any 5-year period: adults or fledged young least terns or piping plovers, or clutches of eggs or broods of least terns or piping plovers) is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

## CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that act to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service recommends that:

1. In order to control public access and use of the John Martin Reservoir south shoreline, the Corps purchase or lease property currently owned by the Santa Fe Railroad at the South Beach area along the south shore of the reservoir.
2. As part of the least tern and piping plover management plan for the John Martin Project, the Corps seek to establish and enhance breeding sites for the birds that would make multiple sites available over the normal range of reservoir water levels.
3. As part of the least tern and piping plover management plan for the John Martin Project, the Corps seek to address issues of predation including but not limited to the increasing population of breeding California Gulls and other gulls at the project site, and the potential that human activities may attract grackles or other potential predators of eggs and birds.

## CONCLUSION

This concludes formal consultation on proposed Federal actions related to the Corps lease transferring recreation and surface water management at the John Martin Dam and Reservoir Project. As required by 50 CFR 402.16, reinitiation of formal consultation is required if (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an adverse effect to the listed species or critical habitat that was not considered in this opinion, (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where incidental take exceeds the authorized, any operations causing such take must cease pending reinitiation.

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If the Service can be of further assistance, please contact Peter Plage of my staff at (303) 275-2370.

Sincerely,



LeRoy W. Carlson  
Colorado Field Supervisor

cc: FWS:ES/GJ  
CDOW, Lamar, CO (J. Yost)  
Plage

Ref: Pete404/ John Martin.bo

**Literature Cited**

Haig, S.M. and J. Plissner. 1992. 1991 International piping plover census. U.S. Fish and Wildlife Service, Fort Snelling, Minnesota. 148 pp.

Mitchel, W. A., M. P. Guilfoyle, and M. S. Wolters. 2000. Riparian shorebirds potentially impacted by USACE reservoir operations. EMRRP Technical Notes Collection (ERDC TN-EMRRP-SI-17), U.S. Army Corps of Engineers Research and Development Center, Vicksburg, Mississippi.

Nelson, D. L. 2000. Least tern and piping plover nesting status in Colorado 2000. Colorado Division of Wildlife, Bailey, Colorado.

Nelson, D.L. 1998. Biological monitoring and habitat restoration and creation for least terns and piping plovers in Colorado: 1997. Colorado Division of Wildlife, Bailey, Colorado.

Ryan, M.R., B.G. Root, and P.M. Mayer. 1993. Status of the piping plovers in the Great Plains of North America: a demographic simulation model. *Conservation Biology* 7:581-585.

U.S. Fish and Wildlife Service. 1990. Recovery plan for the interior population of the least tern (*Sterna antillarum*). U.S. Fish and Wildlife Service, Twin Cities, Minnesota.

U.S. Fish and Wildlife Service. 1994. Revised recovery plan for piping plovers (*Charadrius melodius*) breeding on the Great Lakes and northern Great Plains. Technical/Agency Review Draft. U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 1988. Great Lakes and northern Great Plains piping plover recovery plan. U.S. Fish and Wildlife Service, Twin Cities, Minnesota. 160 pp.

## **APPENDIX D – PERTINENT PUBLIC LAWS**

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- House Document 74-308. Proposed the construction of the Caddoa Dam and Reservoir for flood control and irrigation purposes
- Public Law 74-738, Flood Control Act of 1936 as amended by the Public Law 75-761, Flood Control Act of 1938 – Authorized the construction of the Caddoa Dam and Reservoir for flood control and irrigation purposes.
- Public Law 76-667. Chapter 430, 3<sup>rd</sup> Session. Changed to name of the project to John Martin Reservoir Project in honor of John A Martin, the lake Congressman from Colorado.
- Public Law 78-534, Flood Control Act of 1944. Section 4 of the Act as last amended in 1962 by Section 207 of Public Law 87-874 authorizes USACE to construct, maintain, and operate public parks and recreational facilities in reservoir areas and to grant leases and licenses for lands, including facilities, preferably to Federal, State or local governmental agencies.
- Public Law 85-624, Fish and Wildlife Coordination Act 1958. – The FWCA as amended in 1965 sets down the general policy that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resource development programs. Opportunities for improving fish and wildlife resources and adverse effects on these resources shall be examined along with other purposes which might be served by water resources development.
- Public Law 86-717, Forest Conservation Act. This Act provides for the protection of forest and other vegetative cover for reservoir areas under the jurisdiction of USACE.
- Public Law 89-298, Flood Control Act of 1965. Authorizes the Chief of Engineers to use and not to exceed 10,000 acre-feet of flood control storage space in the reservoir for the purpose of establishing and maintaining a permanent pool for fish and wildlife and recreations purposes at such times as storage space may be available for such permanent pool within the conservation pool as defined in Article III F, Arkansas River Compact I63 Stat. 145).
- Public Law 89-72, Federal Water Project Recreation Act of 1965. This Act requires that not less than one-half the separable costs of developing recreational facilities and all operation and maintenance costs at Federal reservoir projects shall be borne by a non-Federal public body. A HQUSACE/OMB implementation policy made these provisions applicable to projects completed prior to 1965.
- Public Law 91-190, National Environmental Policy Act of 1969. NEPA declared it a national policy to encourage productive and enjoyable harmony between man and his environment, and for other purposes. Specifically, it declared a “continuing policy of the Federal Government...to use all practicable means and measures...to foster and promote the general welfare, to create conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of

present and future generations of Americans.” Section 102 authorized and directed that, to the fullest extent possible, the policies, regulations and public law of the United States shall be interpreted and administered in accordance with the policies of the Act. It is Section 102 that requires consideration of environmental impacts associated with Federal actions. Section 101 of NEPA requires the federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony.

Specifically, Section 101 of the National Environmental Policy Act declares:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
  - Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
  - Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
  - Preserve important historic, cultural, and natural aspects of our national heritage and maintain wherever possible an environment which supports diversity and variety of individual choice;
  - Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities, and
  - Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.
- Public Law 89-665, National Historic Preservation Act of 1966 (NHPA). Establishes a national policy of preserving, restoring, and maintaining cultural resources. It requires Federal agencies to take into account the effect an action may have on sites that may be eligible for inclusion on the National Register of Historic Places.
  - Public Law 101-601, Native American Graves Protection and Repatriation Act. Requires Federal agencies to return Native American human remains and cultural items, including funerary objects and sacred objects, to their respective peoples.
  - Public Law 59-209, Antiquities Act of 1906. The first Federal law established to protect what are now known as "cultural resources" on public lands. It provides a permit procedure for investigating "antiquities" and consists of two parts: An act for the Preservation of American Antiquities and Uniform Rules and Regulations.
  - Public Law 74-292, Historic Sites Act of 1935. Declares it to be a national policy to preserve for (in contrast to protecting from) the public, historic (including prehistoric) sites, buildings, and objects of national significance. This act provides both authorization and a directive for the Secretary of the Interior, through the National Park Service, to assume a position of national leadership in the area of protecting, recovering, and interpreting national archeological historic resources. It also establishes an "Advisory Board on National Parks; Historic Sites, Buildings, and Monuments, a committee of eleven experts appointed by the Secretary to recommend policies to the Department of the Interior."

- Public Law 87-874, Rivers and Harbors Act of 1962. This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- Public Law 88-578, Land and Water Conservation Fund Act of 1965. This act established a fund from which Congress can make appropriations for outdoor recreation. Section 2(2) makes entrance and user fees at reservoirs possible by deleting the words "without charge" from Section 4 of the 1944 Flood Control Act as amended.
- Public Law 89-272, Solid Waste Disposal Act, as amended by PL 94-580, dated October 21, 1976. This act authorized a research and development program with respect to solid waste disposal. It proposes (1) to initiate and accelerate a national research and development program for new and improved methods of proper and economic solid-waste disposal, including studies directed toward the conservation of national resources by reducing the amount of waste and unsalvageable materials and by recovery and utilization of potential resources in solid waste; and (2) to provide technical and financial assistance to State and local governments and interstate agencies in the planning, development, and conduct of solid-waste disposal program.
- Public Law 90-483, River and Harbor and Flood Control Act of 1968, Mitigation of Shore Damages. Section 210 restricted collection of entrance fee at USACE lakes and reservoirs to users of highly developed facilities requiring continuous presence of personnel.
- Public Law 91-611, River and Harbor and Flood Control Act of 1970. Section 234 provides that persons designated by the Chief of Engineers shall have authority to issue a citation for violations of regulations and rules of the Secretary of the Army, published in the Code of Federal Regulations.
- Public Law 92-463, Federal Advisory Committee Act. The Federal Advisory Committee Act became law in 1972 and is the legal foundation defining how federal advisory committees operate. The law has special emphasis on open meetings, chartering, public involvement, and reporting.
- Public Law 92-500, Federal Water Pollution Control Act Amendments of 1972. The Federal Water Pollution Control Act of 1948 (PL 845, 80th Congress), as amended in 1956, 1961, 1965 and 1970 (PL 91- 224), established the basic tenet of uniform State standards for water quality. Public Law 92-500 strongly affirms the Federal interest in this area. "The objective of this act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."
- Public Law 92-516, Federal Environmental Pesticide Control Act of 1972. This act completely revises the Federal Insecticide, Fungicide, and Rodenticide Act. It provides

for complete regulation of pesticides to include regulation, restrictions on use, actions within a single State, and strengthened enforcement.

- Public Law 93-81, Collection of Fees for Use of Certain Outdoor Recreation Facilities. This act amends Section 4 of the Land and Water Conservation Act of 1965, as amended to require each Federal agency to collect special recreation use fees for the use of sites, facilities, equipment, or services furnished at Federal expense.
- Public Law 93-251, Water Resources Development Act of 1974. Section 107 of this law establishes a broad Federal policy which makes it possible to participate with local governmental entities in the costs of sewage treatment plan installations.
- Public Law 93-291, Archeological Conservation Act of 1974. The Secretary of the Interior shall coordinate all Federal survey and recovery activities authorized under this expansion of the 1960 act. The Federal construction agency may transfer up to one percent of project funds to the Secretary with such transferred funds considered non reimbursable project costs.
- Public Law 93-303, Recreation Use Fees. This act amends Section 4 of the Land and Water Conservation Act of 1965, as amended, to establish less restricted criteria under which Federal agencies may charge fees for the use of campgrounds developed and operated at Federal areas under their control.
- Public Law 93-523, Safe Drinking Water Act. The act assures that water supply systems serving the public meet minimum national standards for protection of public health. The act (1) authorizes the Environmental Protection Agency to establish Federal standards for protection from all harmful contaminants, which standards would be applicable to all public water systems, and (2) establishes a joint Federal-State system for assuring compliance with these standards and for protecting underground sources of drinking water.
- Public Law 94-422, Amendment of the Land and Water Conservation Fund Act of 1965. Expands the role of the Advisory Council. Title 2 Section 102a amends Section 106 of the Historical Preservation Act of 1966 to say that the Council can comment on activities which will have an adverse effect on sites either included in or eligible for inclusion in the NRHP.
- Public Law 99-662, The Water Resources Development Act. Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.

## **APPENDIX E – LIST OF ACRONYMS**

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ac-ft	Acre Feet
CPW	Colorado Parks and Wildlife Division
CRMP	Cultural Resources Management Plan
DC	District Commander
DQC	District Quality Control
DQCB	District Quality Control Board
DM	Design Memorandum
EA	Environmental Assessment, NEPA Document
EP	Engineering Pamphlet
EPA	United States Environmental Protection Agency
ER	Engineering Regulation
ESA	Environmentally Sensitive Area
°F	Fahrenheit
FONSI	Finding of No Significant Impact
GIS	Geographical Information Systems
HDR	High Density Recreation
HQ	USACE Headquarters
LDR	Low Density Recreation
LEED	Leadership in Energy and Environmental Design
MP	Master Plan or Master Planning
MRML	Multiple Resource Management Lands
NEPA	National Environmental Policy Act, 1970
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Prevention Act

NRHP	National Register of Historic Places
NOA	Notice of Availability
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
O&M	Operations and Maintenance
OMB	Office of Management and Budget
OMBIL	Operations and Maintenance Business Information
OMP	Operations Management Plan for a specific lake Project
OPM	Operations Project Manager
PDT	Project Development Team
PM	Project Management or Project Manager
PMP	Project Management Plan
RPEC	Regional Planning and Environmental Center
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SHPO	State Historical Preservation Office
SWA	State Wildlife Area
USACE	United States Army Corps of Engineers
USFW	U. S. Fish and Wildlife Service
VM	Vegetative Management Area
WM	Wildlife Management Area



JOHN MARTIN RESERVOIR MASTER PLAN 2018

Prepared by

US Army Corps of Engineers

Regional Environmental Planning Center

Fort Worth District

in cooperation with the Albuquerque District