



**LOWER PECOS RIVER WATERFOWL
AND WILDLIFE AREAS MANAGEMENT PLAN
FOR
THE BRANTLEY PROJECT MITIGATION LANDS
2005-2010**

PURPOSE

The purpose of this management plan is to define the specific management goals and responsibilities, authorities, and rights involved in the wildlife habitat for Brantley Project Mitigation Lands. The Management Plan is based on prior commitment, the Final Environmental Impact Statement (FEIS) on the Brantley Project, the Fish and Wildlife Coordination Act Report on the Unit, the existing management contract between the Bureau of Reclamation (Reclamation) and the New Mexico Department of Game and Fish (Department) and the General Plan for the Project.

This plan recommends operation of three areas as a single management unit, collectively defined as the Brantley Project Mitigation Lands, to provide secure waterfowl resting habitat in the lower Pecos River Valley. The three areas are: Brantley Wildlife Management Area (see Exhibit A), Seven Rivers Waterfowl Area (see Exhibit A), and the W.S. Huey Waterfowl Area (see Exhibit B). Permitted recreational activities will

include both consumptive and non-consumptive wildlife use. Hunting that does not interfere with providing feed and secure resting habitat within the area will be permitted.

MANAGEMENT GOALS

The Brantley Project Mitigation Lands will be managed in a manner that will achieve the goals established within the Lease Agreement between the United States of America and the State of New Mexico for the Administration, Development, Operation, and Maintenance of Certain Designated Fish and Wildlife Areas and Facilities of the Brantley Project, New Mexico, Contract No. 2-LM-40-00640. Cooperative Agreement No. 04-FC-40-2023 is the “funding vehicle” between the Department and Reclamation and shall not nullify the above mentioned Lease Agreement until it expires or is terminated prior to the expiration date by either party in the appropriate manner as stated in the Lease Agreement.

The mitigation lands are to be “managed to fully compensate for the wetland and other types of habitats lost,” as described within the project’s Fish and Wildlife Coordination Act Report.

1. To develop a management program that enhances and maintains wildlife habitat.
2. To maintain environmentally suitable habitat for all indigenous species.
3. To enhance resting habitat for waterfowl in the lower Pecos Valley.
4. To manage access for recreation in those portions of the area not managed by New Mexico State Parks and Recreation Division (NMSP).
5. To provide recreational and hunter opportunity within the Brantley Project Area.
6. To cooperate with the Eddy County Commission, NMSP, Bureau of Land Management (BLM), and Reclamation in the administration of the Brantley Project Mitigation Lands.

Reclamation’s Resource Management Plan (RMP) for Brantley and Avalon Reservoirs (Brantley and Avalon Reservoirs RMP, December 2003) further describes how the overall area is to be managed and includes the Brantley Wildlife Management Area. The RMP clearly sets forth defined management goals, objectives, and standards for guiding and directing future resource management/recreation actions and activities.

INTRODUCTION

In the Final Supplement to the Final Environmental Impact Statement and the Definite Plan Report for the Brantley Project, Eddy County, New Mexico, both dated 1982,

Reclamation adopted certain recommendations made by the U.S. Fish and Wildlife Service (Service) pursuant to requirements of the Fish and Wildlife Coordination Act of August 14, 1946, as amended, 16 U.S.C. 661-667e. Pursuant to the Fish and Wildlife Coordination Act, Reclamation may make available to state wildlife agencies those lands and waters that have been acquired for fish and wildlife purposes.

BRANTLEY WILDLIFE MANAGEMENT AREA

The Brantley Wildlife Management Area is located astride the Pecos River seven miles north of Carlsbad and twenty-three miles south of Artesia. The area consists of approximately 23,400 acres within the Brantley Reservoir site and includes the original McMillan Reservoir Area. The Brantley Wildlife Management Area excludes approximately 2,500 acres within the recreation area managed by the NMSP and approximately 1,400 acres within the dam site and project operations area.

The Management Plan provides for the enhancing or maintaining suitable habitat for upland, waterfowl, furbearer, big game, and non-game species while also providing quality recreational experiences consistent with maintaining the environment.

W.S. HUEY WATERFOWL AREA

The W.S. Huey Waterfowl Management Area is located astride the Pecos River five miles northeast of Artesia. This management area is a combination of State Game Commission and federally held properties consisting of 3,060 acres.

The original waterfowl management area, contained 640 acres was purchased in 1962 by the State Game Commission. The second parcel, containing 2,240 acres was purchased by the United States and originally transferred to the Department for operation and maintenance in 1983 and again in an amended agreement in 1994. Water rights were also purchased by Reclamation for this area.

Reclamation enhanced waterfowl habitat within the mitigation area through the creation of six resting ponds. An irrigation water well currently supplies water to these ponds. An artesian groundwater well, scheduled to be drilled soon, will also provide supplemental water to the ponds. River pumps were installed but are now non-operational due to siltation. The W.S Huey Waterfowl Area also provides approximately 1035 acres of rangeland habitat to wildlife.

SEVEN RIVERS WATERFOWL AREA

The Seven Rivers Waterfowl Area consists of 2,200 acres of agricultural land acquired as part of the floodplain of Brantley Reservoir. It lies within the northwest boundary of the Brantley Wildlife Management Area. Up to 640 acres of this property will be developed to meet the mitigation requirements of the Brantley Project depending upon waterfowl usage and irrigation water availability.

This property and its potential have extensively been reviewed by the Department, Service, Reclamation and the Soil and Conservation Service [now known as the Natural Resources Conservation Service (NRCS)]. All agencies have determined that the agricultural mitigation commitment can be met with the development of the property.

HISTORY

The acquisition and maintenance of the W.S. Huey Waterfowl Area resulted from Congress authorizing Reclamation to construct Brantley Reservoir as an irrigation storage replacement reservoir for the old and unsafe McMillan Reservoir. Although the authorizing legislation did not specifically mention development of a waterfowl management area in connection with this project, it did mention that a secondary purpose of the project was conservation and development of fish and wildlife resources. In addition, the Fish and Wildlife Coordination Act requires that wildlife conservation be given equal consideration in project planning and development.

During the course of planning, which began in early 1970's, several potential sites for a mitigation management area were examined by Reclamation in coordination with the Department. One of the major problems encountered was locating adequate water and irrigable land that could be converted into a manageable block. The area finally selected was the Karr Farm, which was adjacent to the existing Artesia Waterfowl Management Area.

In 1989 the Department determined that the mitigation commitment of the (up to) 640 acres and its production could not be met at the W.S. Huey Waterfowl Area. Farming operations were moved to the Seven Rivers Waterfowl Area where better production could be achieved. The two areas now meet the mitigation commitment.

STATUS

Except for ownership of certain outstanding mineral leases, the Brantley Project Mitigation Lands have been acquired by Reclamation. Administrative management of the surface resource within this acquired area has been transferred to the Department and NMSP through a Memorandum of Understanding. Although agency management responsibilities within the area are exclusionary, coordination will be required to assure accomplishment of mutual responsibilities.

Because Reclamation must comply with federal environmental statutes, Reclamation is responsible for obtaining environmental compliance for activities proposed on Brantley Project Mitigation Lands. The Department will notify Reclamation in advance of any proposed land disturbance plans so that environmental resources, both biological and cultural, can be evaluated consistent with federal law.

W.S. HUEY WATERFOWL AREA

Reclamation began development of the 2,240 acres area in 1985. Construction programs were essentially completed in 1986. Project selection and priority of implementation was accomplished as a coordinated effort between Reclamation and the Department. Construction projects completed were irrigation water storage reservoirs, two circular pivotal irrigation systems, field leveling, irrigation water control structures, and waterfowl resting and nesting lagoons.

In 1989 the emphasis on agricultural production was shifted from what is known as the Karr Farm to the old Artesia Farm (these two areas were co-mingled to create the W.S. Huey Waterfowl Area) to meet the agencies' commitment to waterfowl in the Pecos Valley. Commitments have been made by Reclamation to provide resting areas for waterfowl in the area. Flooding of these areas will be done from November through March with various depths of water to allow for a resting and feeding area for wintering waterfowl.

Drawdown will occur in early April to create conditions for pink smartweed and willow smartweed to germinate and grow. Moist soil conditions during this time will allow sufficient growth of these species to allow them to survive flooding of areas during late May and early June.

Flooding of resting areas will occur during late May and early June. This will be done by covering the bottom surface area with one, or two inches of water to allow germination of willow smartweed and establish barnyard grass during mid-late June draw down. Early August flooding of resting areas in the same manner as listed above will maximize seed production, which will serve as feed for wintering waterfowl.

If above mentioned species of plants prove unsuccessful other favorable species will be selected with the help of New Mexico State University and the Natural Resource Conservation Service.

WATERFOWL MANAGEMENT OBJECTIVES - W.S. HUEY WATERFOWL AREA

1. To provide a 100 acre area for resting, nesting, and feeding of wintering/resident waterfowl.
2. To provide feed for 2,500 geese for 30 days.
3. To provide feed for 2,000 cranes for 30 days

WATERFOWL MANAGEMENT OBJECTIVES – BRANTLEY WILDLIFE MANAGEMENT AREA

1. To provide secure resting habitat for migratory waterfowl.

2. To allow controlled consumptive recreation opportunity consistent with area management objectives.

Brantley Reservoir generally will fluctuate radically in water storage volume, thus the reservoir is expected to provide poor waterfowl feeding habitat. Brantley Reservoir will, however, supply a limited amount of waterfowl resting habitat. Secure resting habitat will be ensured through the Department's coordination with the NMSP to partition a section of Brantley Reservoir from boat use during the period of January 1 through March 1. This program should encourage waterfowl use during the period when recreational boat use is minimal.

Public demand for waterfowl hunting is not expected to exceed available opportunity within the near future on Brantley Reservoir. For this reason waterfowl hunting will be allowed as provided in Game Commission general regulations. Regulations will be implemented that control use if public demand increases to the point where a quality recreational experience is degraded by over utilization.

WATERFOWL MANAGEMENT OBJECTIVES - SEVEN RIVERS WATERFOWL AREA

Snow Geese Management Objectives

1. To provide feed to sustain 10,000 snow geese for 45 days.
2. To provide secure feeding and resting habitat for 10,000 snow geese.
3. To allow controlled consumptive use.
4. To prevent excessive crop depredation on private lands in the Lower Pecos River Valley.

Sandhill Crane Management Objectives

1. To provide feed to sustain 5,000 cranes for 45 days.
2. To provide secure feeding a resting habitat for 5,000 cranes.
3. To allow controlled consumptive use.
4. To prevent excessive crop depredation on private land in the Lower Pecos River Valley.

Duck Management Objectives

1. To provide feed to sustain 5,000 migratory ducks for 90 days.
2. To provide secure feeding and resting habitat for 5,000 ducks
3. To allow controlled consumptive use.
4. To prevent excessive crop depredation on private lands in the Lower Pecos River Valley.

The priority management obligation of the Seven Rivers Waterfowl Management Area will be to provide feed and secure resting and feeding habitat for migratory and wintering waterfowl in New Mexico's Lower Pecos River Valley during December, January, and February.

The priority is to make this feed available in sufficient amounts and at proper times for the waterfowl. To accomplish this, the farm supervisor, local enforcement personnel, and waterfowl project personnel will cooperatively develop a program for making feed available. In addition to providing waterfowl feed, the program will also strive to prevent excessive depredation to private crops in the Lower Pecos River Valley. To prevent waterfowl and crane use of standing crops, grain varieties will be selected for their growth forms that naturally deter waterfowl and crane use. These crops will be left standing undisturbed until needed. The grain will then be made available by mowing a predetermined amount of standing crops. This will flatten the stalks so that grain is provided at or near ground level.

As agricultural research continues to change and improve grain varieties, selections will be made of those varieties, which provide the greatest yield and complement management needs of the Seven Rivers Waterfowl Area. At present, varieties of small grain produce the greatest yield in the Artesia/Carlsbad area. For this reason, small grain will be used as the primary grain-producing crop.

The opportunity exists to enhance a variety of habitat within the Seven Rivers Waterfowl Management Area. Habitat will be enhanced in those areas when and where the opportunity presents itself.

UPLAND MANAGEMENT OBJECTIVES - ALL AREAS

1. To provide habitat to maintain viable pheasant, quail, and dove populations.

2. To encourage free-ranging upland species for viewing, and recreational enjoyment.
3. To allow controlled consumptive recreation opportunity consistent with waterfowl management objectives.
4. To encourage consumptive recreation opportunities for youth.

Vegetative cover on dikes, ditches, and in fields will be maintained for pheasant habitat. Cover on dikes and ditches will be removed only to repair or maintain these facilities and then only outside of the nesting and brooding period. Dikes, ditches, and fields will be burned or mowed only as needed to perform water or farm management practices and during times consistent with maintaining pheasant habitat.

Trees may be developed from naturally occurring species or planted on the area to enhance dove habitat. This will be accomplished in two ways. Trees, with preference given to native species, will be planted in areas containing shallow sub-soil moisture. Plantings of rooted stock that have been hardened to the outdoors will be used to assure survival. Native trees already present on the area will be protected to provide habitat.

To improve quail and pheasant habitat, open or under-stocked vegetation areas will be seeded to grasses, forbs, and shrubs to provide nesting cover and enhance food production.

Development of habitat for dove nesting, resting, and roosting could be accomplished by retaining existing stands of mature trees in appropriate locations and by establishing stands of desirable tree species in other areas. Rio Grande cottonwood or other desirable tree species may be established to enhance dove habitat. In addition to providing dove-nesting habitat, these tree stands will also serve as nesting, resting, and escape habitat for numerous other wildlife species.

BIG-GAME MANAGEMENT OBJECTIVE – ALL AREAS

1. To allow controlled consumptive recreational opportunity consistent with are management objective.

Habitat programs will be designed to maintain or enhance deer, antelope, and turkey habitat. To assure that habitat programs benefit deer, forage species palatable to deer may be included in any seed mixture used within the area. To permit free movement of deer and antelope, fences will be constructed or modified to meet the following specifications: four-strand barbed wire, beginning with the bottom strand 14 inches above the ground

surface, followed by a spacing of 8 inches, 8 inches, and 12 inches respectively.

Prime deer habitat consists of 40 percent cover and 60 percent foraging areas. Any programs implemented on the area will consider deer escape and thermal cover needs.

Deer, antelope, and turkey hunting within the area will be allowed only if these species increase to the point where removal of individual animals is not detrimental to population health.

Depredation on nearby private lands by game animals will be considered in all management decisions. Big game populations on wildlife areas will be controlled to prevent depredation to private property.

Habitat programs on the W.S. Huey will take into consideration turkeys, which have recently been introduced on the lower Pecos River.

FISH MANAGEMENT OBJECTIVE

Brantley Wildlife Management Area

1. To develop and provide fishing opportunity compatible with area management objectives.

Brantley Dam was constructed to replace the ineffectual McMillan Dam. Brantley Reservoir provides irrigation water storage and flood protection below the dam. Because of Brantley Reservoir's irrigation water storage (and the resulting highly variable water levels), along with the minimum permanent pool of only 2,000 acre-feet, the reservoir will never have the fishery potential of a reservoir with a stable, or relatively stable water level.

To ascertain a reservoir's potential for providing a fishery, each reservoir is evaluated in accordance with its capability to sustain fish production, interference with waterfowl use, and safety as a public use area. Both the Pecos River and Brantley Reservoir will be managed using fry plantings to provide a put-grow-and-take warm water fishery. Some spawning is also expected to occur and this will supplement the fry stocking.

The sport fish resource at Brantley Reservoir and the Pecos River is managed by the Department according to their policies and procedures.

W.S. Huey Waterfowl Area

1. To develop and provide fishing opportunity compatible with waterfowl management objectives.

Fishing opportunity will be provided in those areas and at times that do not conflict with meeting waterfowl management objectives. To ascertain a reservoir's potential for providing a fishery, each reservoir will be evaluated in accordance with its capability to sustain fish production, interference with waterfowl use, and safety as a public use area. After these evaluations are completed, suitable reservoirs will be open to public fishing.

Openings will be developed through the dense saltcedar stands that border the Pecos River to provide fishermen access at strategic points. Parking for fishing access will be restricted to designated parking areas and along the dike road.

SPECIAL STATUS SPECIES AND NATIVE FISH MANAGEMENT OBJECTIVE – ALL AREAS

1. To implement management strategies, which promote continued maintenance or enhancement of native and special status species and their habitat.

Before any habitat alteration or sport fish management is undertaken, an evaluation will be made to determine the potential effects of the proposed program on endangered species. If adverse impacts are identified, proposed programs will be eliminated, programs with a lesser impact will be sought or mitigation will be provided to offset negative impacts. Management practices will be implemented to also benefit native fish species. Native fish species will be given management priority.

FURBEARER AND PREDATORY ANIMAL MANAGEMENT OBJECTIVE – ALL AREAS

1. To provide secure habitat for predatory and furbearer species.

The occurrence of furbearer and predatory mammals will be encouraged on the Brantley Project Mitigation Lands. The area will be evaluated to determine habitat deficiencies. To enhance habitat for these species, public participation may be solicited to provide habitat-lacking features such as resting and den boxes. In the event that predatory non-furbearer mammals exceed desirable densities as determined by the Conservation Services Division, the surplus may be removed by Department employees or designated public trappers.

Raptors and owls will be encouraged to use the Brantley Project Mitigation Lands for roosting, nesting, and feeding. Dead and hollow trees, roosting and hawking perches, and other significant habitat features will be maintained, or provided if absent, and protected for use by these species.

Trapping, pursuit hunting, and calling will be allowed on the Brantley Wildlife Management Area to the extent that these uses do not conflict with other recreational or resource activities. Furbearer harvest on the area will be allowed as provided by general commission regulations. The W.S. Huey and Seven Rivers Waterfowl Areas shall be closed to trapping, pursuit hunting, and calling.

NON-GAME SPECIES MANAGEMENT OBJECTIVE – ALL AREAS

1. To provide suitable habitat for non-game wildlife species.

Management practices for the improvement of habitat for game species will be implemented to also be beneficial to non-game species. Management practices applied on the Brantley Project Mitigation Lands will be coordinated with the Department's non-game biologist. If an intended habitat modification will adversely impact non-game species, then that activity may be modified by the Department.

The occurrence of rabbits, gophers, mice, and other non-game species at normal population densities will be encouraged as natural components of the biological community. If, however, these species exceed acceptable densities as determined by the Conservation Services Division, controls may be implemented by Department personnel. Controls will consist of mechanical methods or devices and approved chemicals. Department personnel in accordance with department policy will remove feral animal(s) occurring on management areas.

HABITAT DEVELOPMENT AND MANAGEMENT OF BRANTLEY WILDLIFE MANAGEMENT AREA

The Brantley Wildlife Management Area contains an interspersed of desert grasses, shrubs, and saltcedar communities around McMillan Reservoir. The Brantley Wildlife Management Area has been divided for management purposes into five management units (see Figure 1). These units are quite distinguishable based upon their past use or on their proximity to moisture.

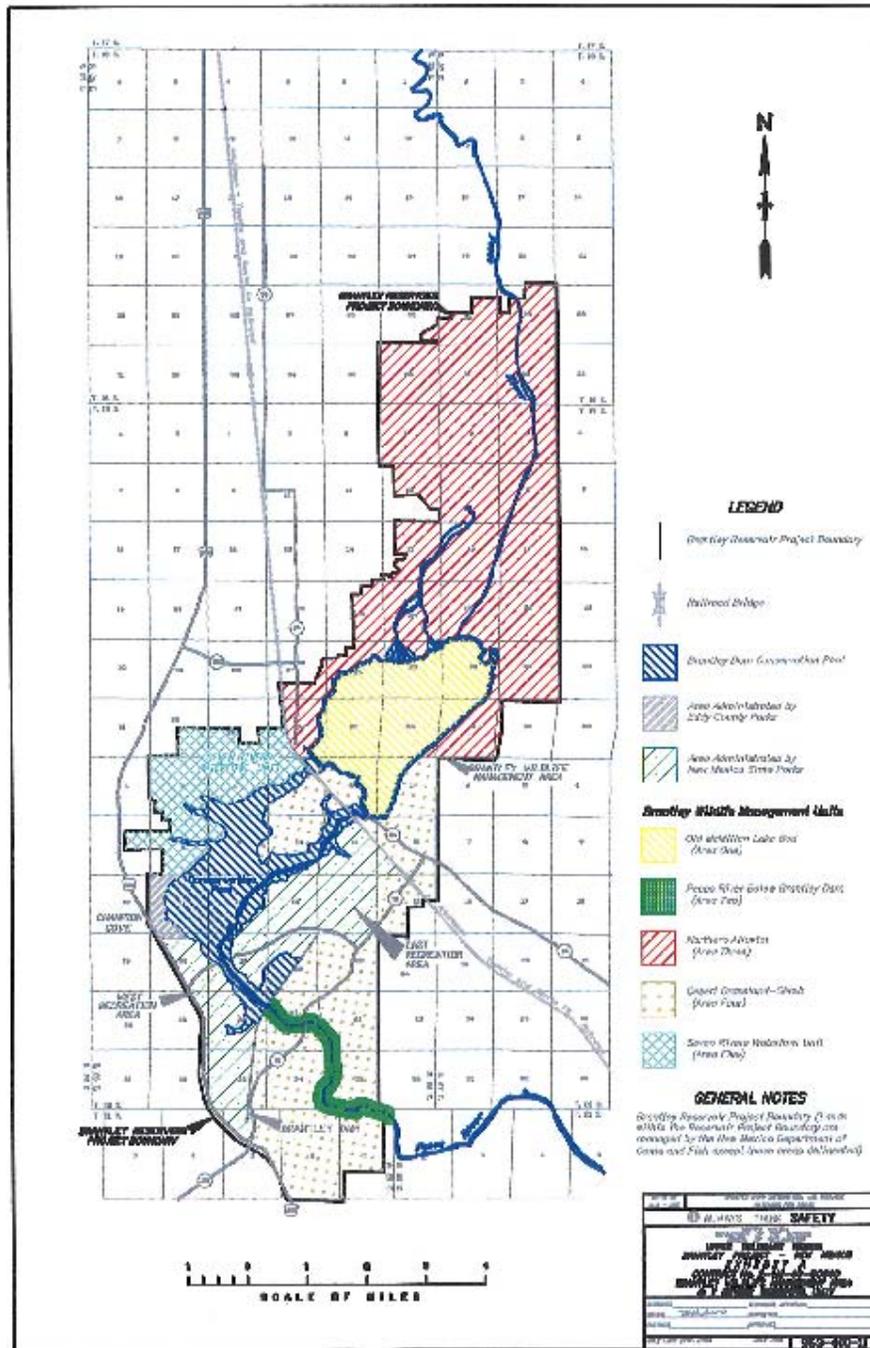


Figure 1 – Brantley Wildlife Management Units

Area One – Old McMillan Lake Bed

The old McMillan lakebed consists of approximately 2,500 acres and represents the McMillan Reservoir floodplain. The silt flat created by the draining of McMillan Lake is highly erosive, arid, and alkaline. Reclamation has made good faith efforts two different times to establish vegetative cover on the McMillan Lake delta without much success due to the difficult site conditions. At this time, Reclamation does not intend to pursue spending additional federal funds on this endeavor.



Area One: Old McMillan Lake Bed

Area Two – Pecos River below Brantley Dam

The Pecos River below Brantley Dam consists of a riparian zone bordering the river, and an outlying community of desert grassland-shrubs. Heavy past grazing has reduced ground cover and a maze of roads has resulted from unregulated vehicular use. The area is eroding badly because of the combined abuses.

A designated road system will be developed within the area to control vehicular use. The Eddy County Commission has agreed to develop and maintain the primary access route within this area as a county road for recreational access.

Recreational access to the Pecos River will be provided from the main access road by developing a road parallel to and on the west side of the Pecos River. Additional access to the river will be afforded through spur roads terminating at least fifty yards from the river at designated parking

areas with trail access provided to the river. If the main road approaches the river closer than one hundred yards, then parking areas will be developed along the main road.

Erosion within this area is occurring as both sheet and gully. The Department will request the NRCS to develop a plan to control this erosion. The erosion control plan will be appended to this plan and appropriate management programs will be implemented.

Saltcedar occurs on the area forming a hedge along the Pecos River. In its present growth form, this saltcedar hedge provides fairly productive wildlife habitat. To enhance the aesthetics of the area and improve its utility for wildlife, additional species of trees, with preference given to native species may be planted within the Pecos River riparian area. Plantings of rooted stock hardened to the outdoors will be made to enhance tree survival.



Area Two: Pecos River below Brantley Dam

Area Three – Northern Alluvial

Vegetation in the northern alluvial is a result of conditions that developed after Lake McMillan was established. With Lake McMillan breached, alteration within the area has been quite extensive as vegetation adjusts to the new environment.

Reclamation has cleared a floodway within the area and will maintain cleared area under the authority of Public Law 88-594. Reclamation controls saltcedar growth from the Sumner Dam area to the New Mexico-

Texas state line. This excludes the area between the Artesia bridge and north boundary of Reclamation's Brantley lands. Reclamation contracts with the Carlsbad Irrigation District to perform the mechanical removal work. Saltcedar removal is primarily accomplished utilizing rubber-tire tractors with root plows, and a D-7 caterpillar with a rake attachment. The Pecos River Water Salvage Project is, to date, the largest and most successful effort to control the growth of saltcedar in the Pecos Valley.

Recreational opportunities will be maximized within this area provided that use is not detrimental to accomplishing management objectives. Camping, however, will be prohibited. Recreational use entry may be controlled if use exceeds the areas' capacity to resist unacceptable degradation.

A designated road system will be maintained which provides reasonable access for recreational pursuits. This road system will consist of a road along the west boundary, lateral roads to the Pecos River, and the McMillan Lake delta, and a road along the Pecos River. Primitive parking areas will be cleared at intervals along the Pecos River for day parking only. Foot trails will be developed from the Pecos River road to the river for recreational access.



Area Three – Northern Alluvial

Area Four – Desert Grassland – Shrub

The desert grassland-shrub area consists of the lowlands surrounding Brantley Dam and the lower Pecos River. This area is relatively flat with a good soil mantle. Overgrazing during the past has reduced cover and accelerated erosion. An escarpment is found adjacent to and east of the Pecos River. Small erosion canyons have formed at intervals along this escarpment. The mouths of these canyons provide an excellent opportunity for habitat enhancement projects. In these headers, low rock and masonry dams can be constructed. The area behind these dams will collect silt and moisture and stimulate vegetation growth.



Area Four – Desert Grassland - Shrub

FIRE CONTROL

Fire prevention and control in wetland/riparian areas is a major concern. As fuel loads increase due to vegetation development in these areas, fire prevention and suppression will be an increasingly important consideration. Therefore, no public fires will be allowed except in designated areas. While this may prove inconvenient to some recreational users of the area, such as night fishermen, the substantial risk to the wetland/riparian areas, facilities and equipment preclude such public activities. However, prescribed burns may be conducted by the Department or under qualified supervision to achieve management goals after acquiring all necessary permits and with proper planning and safeguards to achieve various management objectives.

To further reduce the risk of catastrophic fires, fuel-breaks will be considered and may be constructed and established as vegetation or geography dictates or as otherwise required. Fuel-breaks are typified as vegetation changes which slow or stop the spread of fire. Fuel-breaks can be developed through the establishment of low growing, warm season grass species such as alkali sacaton (*Sporobolus airoides*), Galleta grass (*Hilaria jamesii*) or blue gramma (*Boutaloua gracilis*), which remain green for a long period. Excess fuels, which accumulate in these fuel-breaks, may be eliminated using prescribed burns during the winter or early spring months when the grasses are dormant and when risk of escaping fire is low. Should prescribed burns be determined necessary, the Department will be responsible for conducting the burns and acquiring all required permits. The Department will coordinate with Reclamation during the planning process to ensure the proper environmental compliance is obtained. If adequate expertise in prescribed burning is not available within the Department, the Department will contact BLM or the New Mexico State Forestry Department for assistance in planning and conducting these prescribed burns. In any case, all prescribed burns will be fully coordinated with all appropriate county, state, and federal agencies prior to implementation.

REHABILITATION OF WILDFIRE DAMAGE

In the event of a wildfire, whether natural or man caused, the Department will immediately notify Reclamation. If actions are necessary to restore vegetation, the Department and Reclamation will develop a rehabilitation plan prior to requesting any emergency funds. Damage to structures or equipment resulting from wildfires will be repaired or replaced on a case-by-case basis depending of actual need and funding availability.

SOIL AND WATER MANAGEMENT

MANAGEMENT OBJECTIVES:

1. To develop and maintain cropland soil in a condition that promotes efficient farming provides acceptable vegetative yields, and retards soil loss.
2. To apply water in amounts and by techniques that maximize yield, maintains soil fertility, and inhibits soil loss.
3. To apply farming techniques that conserve water, enhance soil fertility, and maximize crop production.
4. To maintain a record of crop production by systematically sampling and recording crop yield for each cultivated field.

FERTILIZATION

The New Mexico State University Agricultural Experiment Station will be asked by the Department to continue research into fertilization techniques to enhance crop production

and to improve soil fertility. Special emphasis will be attached to reclaiming unproductive sites, which occur within fields on the Artesia farm section of the W.S. Huey. The Plant Science Center and Extension Farm Demonstration Specialist will be asked to assist in this program. Research findings that enhance crop production or improve soil fertility will be incorporated into farm management programs.

Organic fertilizer will be added as needed to the soil as a conditioner. This will be provided through two programs. It will be applied as green manure crops produced on the area or by manure or sludge application. As a rule of thumb, manure will be applied at the rate of 20 yards per acre. Crops and other vegetation produced naturally on farmed areas will be treated as a source of organic fertilizer rather than being removed or burned. A moldboard plow and disk will be used to mix the crop or manure thoroughly into the soil.

Chemical fertilizers will be applied to the soil to enhance plant growth and to increase microbial activity. Before a grain crop is planted in the field, phosphorous, potassium, and nitrogen will be applied according to soil or plant needs. All of the phosphorous and potassium and one-half of the indicated nitrogen allocation will be applied during seedbed preparation. The remaining nitrogen allocation will be applied to the crop as basal side dressing or foliage application. Nitrogen fertilizer will be applied in manner so that it will not be available for wildlife consumption, which could be toxic.

In the lower Pecos River Valley it has been determined that the only chemical fertilizer that needs to be applied to a legume crop is phosphorous. In accordance with these findings, phosphorous will be applied to legume crops according to the Extension agent's recommendations.

PEST MANAGEMENT

The Department of the Interior (DOI) pesticide policy requires Integrated Pest Management (IPM) plans be prepared for all pest control programs on DOI owned lands. The IPM plan identifies target pests and means of control. An IPM plan considers chemical, mechanical, cultural, and biological methods for all identified pests. The IPM plan considers the least toxic, most cost effective method to meet it management objectives. The Department, in cooperation with Reclamation, shall prepare and IPM plan. The IPM Plan will be developed and implemented on the W.S. Huey and Seven Rivers Waterfowl Management Areas and will include the agricultural areas as well as the undeveloped portions of Brantley, which may be affected.

All pesticide use shall be in compliance with the IPM plan. The IPM will apply to all sharecroppers, custom farmers, or other groups or individuals who under the direct supervision of the Department may have a legitimate need for pesticide use. Unwanted vegetation will be controlled primarily by cultivation and moisture control practices and secondarily through the use of approved herbicides.

SOIL PREPARATION AND CONDITIONING

Soil preparation includes incorporating and mixing chemical and organic material with the soil, preparing the soil to receive seed, breaking up compacted strata, and maintaining an environment in which micro-organisms prosper. In this environment, fast efficient seed germination occurs and plant growth is vigorous. To meet these conditions, soil preparation will consist of moldboard plowing, disking, and floating. Appropriately applied, these techniques will accomplish soil preparation and conditioning needed on the area.

A special soil management problem occurs on the area and involves fracturing areas in which soil or chemical agents have accumulated and become impervious to water and prevents root penetration. These zones are known as hardpans. Fields which contain a hardpan will be tilled to mechanically fracture and disperse this zone. If these areas occur at depths less than 30 inches below the surface, and are less than six inches in thickness, chiseling will be used to fracture the strata. If the hardpan occurs at depths in excess of 30 inches, the area will be treated by digging holes through the strata or installing drainpipes to remove accumulated water. If the expense of treating a hardpan in an area is prohibitively high, that area will be planted and maintained in perennial vegetation.

CROP PRODUCTION

The primary grain and forage crops produced on the Seven Rivers Waterfowl Area will be determined by plant adaptability, water quality, soil condition, and waterfowl preference. Taking these factors into consideration, varieties of small grain will be grown at this time.

Grain crops favored by wintering waterfowl are planted in early summer. Acreage planted will be determined by past waterfowl usage and anticipated usage of the area by wintering waterfowl. These figures will provide 1) the Department an idea of how many wintering waterfowl may be present in the Pecos Valley the following winter and, 2) an idea of how many waterfowl the Department will be responsible for feeding in accordance with the Lower Pecos Valley Waterfowl Management Plan. Crops will be planted on a three-year rotation basis, with alfalfa being the alternating crop for grains. This is done as a natural means to restore needed nitrogen in the soil. Appropriate commercial fertilizers will be used as needed according to soil samples taken. Approved herbicides will be used as needed to control unwanted weeds and grasses. Approved pesticides, in accordance with DOI guidelines, will be used as needed for control of pest in cultivated crops.

ANNUAL FARM PLAN

A farm plan will be completed yearly by the Department and submitted to Reclamation.

SOIL SAMPLING

Fields will be sampled as necessary. Soil samples will be taken by Department personnel or a contracted chemical company to determine optimum broadcast rates.

TO DETERMINE POUNDS OR BUSHELS OF GRAIN PRODUCED IN A ROW CROP

1. Select at random one row section ten-feet long for each ten acres within the field.
2. Harvest grain from the sample row section.
3. Weigh the harvested grain on scales accurate to one one-hundredth of a pound.
4. Measure distance to the nearest inch between row centers.
5. Yield in pounds per acre: $43,560 \times \text{Total weight of grain, divided by number of sample plots (Inches between rows centers divided by } 12 \times 10)$
6. Yield in bushels per acre = pounds per acre x 56

TO CALCULATE POUNDS OF FORAGE PRODUCED IN A BROADCAST CROP OR IN PASTURE

1. Select two plots at random for every ten acres in sample area. Place a 9.6 square hoop over vegetation in areas to be sampled.
2. Clip each sample plot. Place clipped foliage in paper sack and store in a dry location for seven days.
3. Combine clippings from all samples taken within a sample area and weigh in grams.
4. Yield in pounds of forage per acre = Weight in grams.

RECREATION

CONSUMPTIVE RECREATION OBJECTIVE – ALL AREAS

1. To provide or maintain habitat in which migratory and upland birds may be utilized.

2. To provide a warm-water fishery in those areas suited for recreational use and not in conflict with waterfowl management.
3. Controlled hunting of sandhill cranes, ducks, geese, upland birds, deer, antelope, and turkeys, may be permitted on the Brantley Project Mitigation Lands. The number of hunters allowed on the area to participate in hunting or any species may be restricted to provide a quality recreational experience. Nontoxic shot will be required for hunting of all species of birds.
4. The maximum amount of fishing opportunity will be permitted within the management area that is consistent with waterfowl management.
5. Since trapping and pursuit hunting would occur during critical periods and represent unwanted disturbance, these activities will be prohibited on the W.S. Huey and Seven Rivers Waterfowl Areas. They will be permitted on the Brantley Wildlife Management Area.
6. Issuance of collecting permits for wildlife species will be done in coordination between Field Operations and the Assistance Chief of Conservation Service. This will provide improved management coordination for this area.

Recreational demand for hunting, fishing, or trapping of protected resident species is not expected to exceed the available recreational potential for this area in the near future. Therefore, these activities will be allowed on the Brantley Project Mitigation Lands as provided by the general Game Commission regulations. If future consumptive recreation demand exceeds supply, recreational use will be restricted to levels commensurate with the areas recreational potential.

Controlled access within the Brantley Project Mitigation Lands will be provided through a designated road system. Off-road vehicular use or driving on undesignated roads will be prohibited.

Overnight camping will not be allowed within the management areas. The management areas will be restricted to day use only, since overnight camping is provided on State Park campsites. Camping restrictions as provided should not inconvenience recreational users, but will help to control unauthorized activities.

The heaviest recreational use of the area is expected to occur along the Pecos River below Brantley Dam. The Eddy County commission has agreed to develop and maintain a county road with this area for recreational use. An access road will be developed from this county road to parking areas from which trails will be developed to the river. The Departments' responsibilities for managing recreational consumptive use are restricted to areas outlined in the long- term management agreement between the two agencies for activities mandated by state law when appropriate.

All recreational facilities developed by the Department will be placed on the west side of the river. The area east of the Pecos River will be left in its present vegetative condition to the extent possible. Under the proposed management system, recreationists using developed sites along the west bank of the river will view an unaltered landscape directly across the river from these sites.

NONCONSUMPTIVE RECREATION

Access and camping restrictions will assist in recreational use control. Hiking, photography, wildlife viewing, and other dispersed recreational uses will be encouraged so that participants will make use of the available recreational pursuits in the area. Signs will be posted at each road entry point. These signs will include information on regulations, which are pertinent for administration of the area.

COMMERCIAL USES

OIL AND GAS

A cooperative management approach will be taken with oil and gas leases to minimize habitat damage and wildlife disturbance. Reclamation, in consultation with the Department, will negotiate with mineral leases to assure that minimal habitat degradation and wildlife disturbance occur on the area. Mitigation of impacts will be negotiated as appropriate.

LIVESTOCK GRAZING

Livestock grazing will be conducted in accordance with Department policy and as stipulated in the long-term management agreement.

SHARECROPPING

Sharecropping will be conducted in accordance with Department policy and as stipulated in the long-term management agreement.

FUEL-WOOD GATHERING

Fuel-wood gathering will be conducted in accordance with Department policy or approved management action.

ADMINISTRATION

The Brantley Project Mitigation Lands shall provide consumptive and non-consumptive uses. The areas will be maintained in a condition that promotes efficient operation and provides a pleasant viewing quality. Signs will be posted to disperse information and help protect the area from unlawful and unauthorized uses.

A designated road system will be developed and maintained to provide reasonable access. Unnecessary roads will be closed, seeded, and returned to natural vegetation. Trees will be planted in riparian areas to serve as windbreaks, nesting, rearing, and escape cover for wildlife and provide for a more aesthetically pleasing area for recreational users.

All development (roads, cropping, clearing, etc.) will be designed and implemented in such a way as to protect historic and prehistoric archeological sites. All construction will be accomplished in accordance with state building codes and regulations.

The Department will coordinate annually with the NMSP to provide a secure waterfowl resting area within Brantley Reservoir. This area will be marked with buoys to provide a boat free waterfowl resting area. The area boundary will be adjusted as necessary to accommodate both waterfowl and recreational user needs.

National Environmental Policy Act and the Endangered Species Act compliance associated with the proposed activities will be the responsibility of Reclamation in cooperation with the Department. Compliance with State of New Mexico environmental statutes will be the responsibility of the Department in cooperation with Reclamation.

MAINTENANCE

RECLAMATION

- In accordance with historical site preservation requirements, maintain the McMillan Dam house and remaining portions of McMillan Dam outlet structures.
- Maintain the floodway clearings.

DEPARTMENT

- Responsibilities are defined within the Lease Agreement between the United States of America and the State of New Mexico for the Administration, Development, Operation, and Maintenance of Certain Designated Fish and Wildlife Areas and Facilities of the Brantley Project, New Mexico: Contract No 2-LM-40-00640.
- The road system in the management areas will be maintained in a condition suitable for recreational access. Coordination will be maintained with the Eddy County Commission for maintenance of the Pecos River recreational access road. Fences on the area will be maintained to exclude livestock. Signs will be installed and maintained to mark the area and inform users of administrative regulations. Plots containing vegetation manipulation and reseedings will be maintained to provide appropriate wildlife feed and cover. Trial plantings of native vegetation may be conducted to determine their suitability for planting on the area.

GENERAL MANAGEMENT RESPONSIBILITIES

SANITATION

Sanitation on Brantley Project Mitigation Lands shall be accomplished through a “Pack it In, Pack It Out” system. Trash receptacles and solid waste service will not be provided for the public. The Department will actively enforce litter laws and encourage the public through personal contact and signs to leave the area at least as clean as they found it. Litter, which does accumulate will be removed by Department employees and disposed of appropriately. However, no dumping will be allowed to occur for any reason.

INFORMATIONAL AND REGULATORY SIGNING

The Department will post all necessary informational and regulatory signs to provide the public with sufficient information to prevent undue wildlife disturbance or habitat destruction and provide for public safety.

EVALUATION

The Conservation Services Division will develop and distribute a “Status Report” that includes a program agenda for the upcoming year. This report will be given to the Federal Aid Project leader and Reclamation prior to preparation of the annual work plan.

A copy of the annual work plan will be provided to Reclamation during the Annual Work Plan Meeting, scheduled during January or February of each year. During this meeting, the Department will discuss their proposed work plan and budget to Reclamation. The Department will also provide a report outlining the Department’s accomplishments and deficiencies in accomplishing programs outlined in the yearly work plan.

Specifically, the Department’s work plan will estimate the annual operation and maintenance expenses anticipated on the Subject Lands for a three (3) year federal fiscal year period (October 1 – September 30). During the annual work plan meeting, Reclamation will provide any necessary input regarding the work plan. Following this meeting, the Department shall submit their final estimates (to the Area Manager; Attention: Environment Division, Bureau of Reclamation, Albuquerque Area Office, 555 Broadway NE, Ste 1; Albuquerque, NM 87102) for approval on or before July 1 prior to beginning of the next federal fiscal year. The approved budget, subject to budgetary approval as required by state law, will provide the basis for the Department’s annual operations with such subsequent modifications as approved in advance by both parties.

Reclamation will also determine whether planned activities will affect environmental resources including cultural resources and threatened and endangered species. If necessary, Reclamation will cooperate with the Department to develop acceptable alternatives or appropriate treatment of resources. Should activities be added after the annual work plan is approved, the Department will provide a copy of the plans to Reclamation and provide sufficient time and planning for environmental analysis and

compliance. Every five (5) years Reclamation will conduct a management review of the Brantley Project Mitigation Lands. The Department will meet with Reclamation and assist in providing management records and other data needed in the preparation of this report.

LAW ENFORCEMENT

The Department will utilize its law enforcement authority in the management and protections of Brantley Project Mitigation Lands. The Department will provide a sufficient level of presence through an on-site manager to prevent unnecessary wildlife disturbance, degradation of wildlife habitat, and damage or theft to building, equipment, and other facilities.

CUSTODIAL RESPONSIBILITY

Custodial responsibility is assigned to the Lower Pecos Waterfowl Areas Supervisor who will be responsible for area surveillance.

REVISION AND AMENDMENT OF THE MANAGEMENT PLAN

This plan will be reviewed every five years to assure that management goals have been met or are progressing in the correct manner. Reviews do not require revisions, but any significant changes in management goals or priorities must be recognized and documented as a revision to this Management Plan, with the written concurrence by both the Department and Reclamation.

Amendments to this plan between scheduled reviews will be on an “as needed” basis. Requests for amendments may be proposed by the Department or Reclamation and will be done on a cooperative basis by both agencies. Any amendments will be documented as an amendment to the Management Plan and will be in written form and approved in writing by both the Department and Reclamation. Any amendment to this management plan will be incorporated as an appendix.