Colorado River Salinity Control Program, State of Colorado Salinity Control Unit Summary, FY 2015

The Water Quality Act of 1965 (Public Law 89-234), as amended by the Federal Water Pollution Control Act of 1972, mandated efforts to maintain water quality standards in the United States. Congress enacted the Colorado River Basin Salinity Control Act (PL 93-320) in June 1974. Title I of the Act addresses the United States' commitment to Mexico and provided means for the U.S. to comply with provisions of Minute 242. Title II of the Act created a water quality program for salinity control in the United States. Primary responsibility was assigned to the Secretary of Interior and the US Bureau of Reclamation (USBR). USDA was instructed to support USBR's program with its existing authorities.

The USDA-Natural Resources Conservation Service (NRCS), formerly USDA-Soil Conservation Service (SCS), both herein referenced as NRCS, initiated a program to make a variety of irrigation improvements to reduce deep percolation and on-farm ditch seepage to reduce the salt load potential to the Colorado River. Salinity control projects were initiated in Colorado starting with Grand Valley Unit in 1979, Lower Gunnison Unit in 1988, McElmo Creek Unit in 1989, Mancos Valley in 2004, and Silt in 2005. The NRCS irrigation improvement work included piping or lining irrigation ditches and small laterals, and improving the on-farm irrigation systems. In 2010 the Salinity Control Forum recommended the NRCS approve designated salinity control funding for small individual projects in catchments within the Colorado River Basin, but outside of the designated salinity control units to utilize salinity funds not used in the designated units. The Out-of-Project Area Tier 2 individual irrigation improvement projects are funded based on their predicted salinity control benefits.

The Salinity Control Act also requires that within designated project areas, all wildlife habitat values lost due to the irrigation improvements will be replaced concurrently and proportionally to the installation of the improved irrigation system acres. NRCS and the U.S. Fish and Wildlife Service have agreed on set habitat replacement acreage amounts for each designated project area, which is typically approximately two (2) percent of the irrigation improvement acres.

Colorado Project Summary FY 2015 – Acres Treated and Tons Per Year

Project Area	Project Starting Year	Planned Treatment (Acres)	FY 2015 Treated (Acres)	Cummulative Cropland Treated (Acres)	Treated Acres Applied to Total Project Acre Treatment Goal (Percent)	Planned Treatment (Tons)	FY 2015 (Tons)	Cumulative Treated (Tons)	Treated Tons Reported to Total Project Ton Treatment Goal (Percent)	FY 2015 Amortized Cost Per Ton [1/]
Grand Valley -Completed Project	1979	42,800	41	42,860	100%	134,000	72	143,495	107%	$114.77
Lower Gunnison	2005	115,000	1,448	67,016	58%	166,000	1,860	119,057	72%	$167.75
McElmo Creek	2004	21,550	718	15,897	74%	48,600	978	29,455	61%	$126.27
Mancos Valley	1989	5,400	5	2,748	51%	11,940	18	4,426	37%	$268.00
Silt	1988	2,800	109	1,712	61%	3,990	41	2,274	57%	$370.97
Out-of-Project Area Tier 2	2010	na	207	2,372	na	na	407	4,437	na	$70.41

[1/] The amortized cost per ton is calculated as the Total Federal Financial (FA) cost plus Technical Assistance (TA) cost times the annual amortization factor based on the annual percentage rate for each year. The Federal TA is based on the FA dollars times 0.67 for each project, and the amortization period is 25 years.

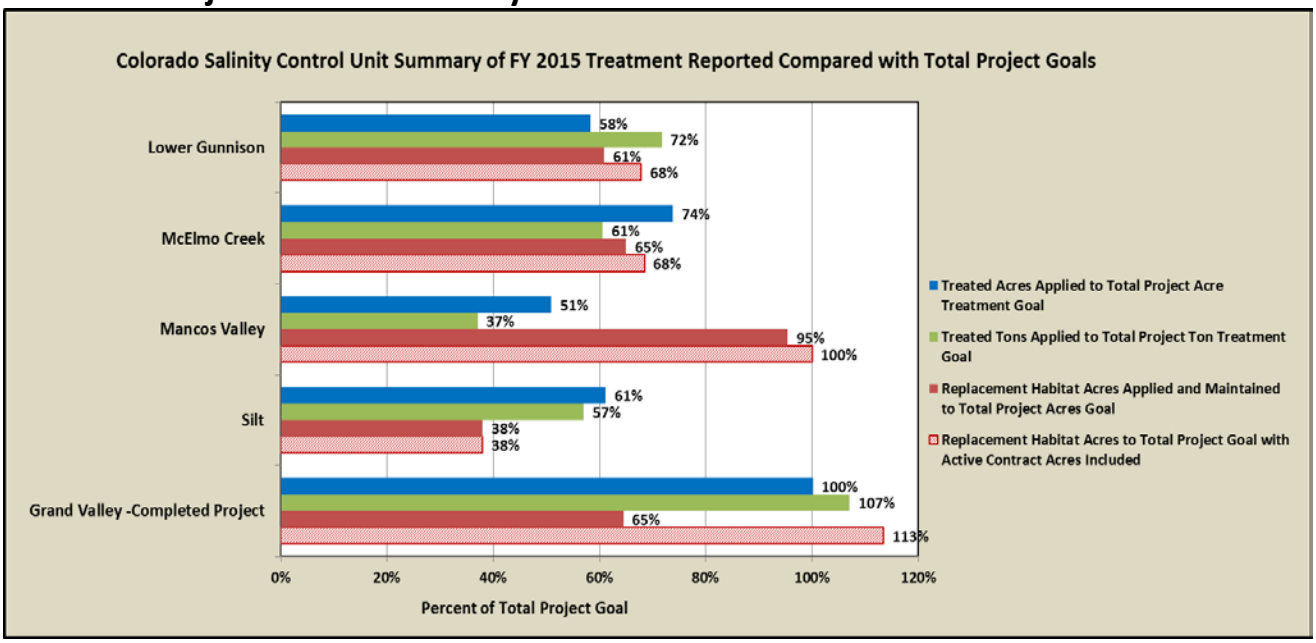
Note also, the wide variation in amortized cost per ton is based in a large part on the variation in salinity loading rates where the each project is located. The predicted salinity loading rate within the designated salinity control units ranges from a high of 4.3 tons per year per acre in the Grand Valley Unit to a low of 1.0 tons per year per acre in the Mancos Valley and Silt Units.

Colorado Project Summary FY 2015 – Salinity Wildlife Habitat Replacement for Designated Salinity Control Units

Project Area	Project Starting Year	Replacement Habitat Applied and Maintained (Acres)	Replacement Habitat Current Goal (Acres)	Current Surplus or Deficit (Acres)	Replacement Habitat in Active Contracts /1 (Acres)	Current Potential Replacement Habitat Deficit (Acres)	Replacement Habitat Acres Applied and Maintained to Total Project Acres Goal (Percent)	Replacement Habitat Acres to Total Project Goal with Active Contracts Included (Percent)
Grand Valley -Completed Project	1979	778	1,206	-428	590	0	65%	113%
Lower Gunnison	2005	1,400	1,340	60	160	0	61%	68%
McElmo Creek	2004	280	318	-38	15	-23	65%	68%
Mancos Valley	1989	103	55	48	5	0	95%	100%
Silt	1988	19	31	-12	0	-12	38%	38%

/1 Active Contracts are projects with obligated FA and TA funds, and planned conservation practices being applied. The active habitat contracts have various wildlife practices currently being applied as replacement habitat through either significant enhancement of the habitat value and/or developing new habitat acres.

Colorado Project Status Summary FY 2015



Colorado River Salinity Control Program Monitoring and Evaluation

Each salinity control unit has three main goals. The first is on farm acres with improved irrigation systems applied, the second is a reported reduction in salinity achieved by the on farm irrigation system improvement and any near farm irrigation delivery system improvements done as part of the NRCS project, and third the replacement of "habitat values forgone" which was converted to an acreage goal agreed to by the NRCS and USDI-Fish and Wildlife Service. The replacement habitat goal was typically set at about 2 percent of the irrigated acres treated within each project area. The net goal for each project area is that the wildlife habitat replacement acres be done concurrent and proportional with the irrigated acres treated to date. Within each project area periodic analysis is done to determine whether the irrigation improvement projects and establish wildlife replacement habitat projects are being managed and maintained as designed. A full Monitoring and Evaluation report for each year is available from the USDA- Natural Resources Conservation Service, Colorado State Office in Denver, Colorado.

The Grand Valley – Completed Project has achieved the irrigation treatment acreage goal, and exceeded the planned ton goal primarily due to additional higher efficiency levels of on farm irrigation system improvements and a much larger amount of near farm irrigation delivery system improvements than were anticipated when the original project plan was developed. The Grand Valley Unit has a current habitat replacement goal of 1,206 acres. There are currently 778 acres or suitable replacement habitat applied and maintained, however the unit has 590 acres of additional habitat under contract and being applied, and a large portion is on Colorado State Parks and Wildlife land. Since the on farm irrigation improvement project is essentially complete, the project area should meet or exceed the total habitat replacement goal when all of the current active habitat contracts are completed.

The Lower Gunnison Project has met over half of the acreage treatment goal, and has met 72 percent of the ton reduction goal primarily due to a higher efficiency level of irrigation system improvement and additional treatment of near farm irrigation delivery systems treated as part of the NRCS on farm program. The original project goal was to treat 135,000 acres of irrigated cropland. However extensive urban, sub-urban, and small acreage residential development has occurred in the project area, reducing the predicted number of acres needing treatment and eligible for the NRCS farm oriented financial assistance programs, to the current level of 115,000 acres. Given the tons reported are tracking ahead of the acres treated, it is still expected the original 166,000 ton per year salinity reduction goals will be achieved even with the reduction in acres treated. The Lower Gunnison Unit wildlife habitat replacement acres applied and maintained is concurrent with the irrigated acres treated to date, and the unit has enough additional acres applied and in active contracts they should remain concurrent for the foreseeable future.

The McElmo Creek Project has met 74 percent of the acreage treatment goal, and the project is at 61 percent of the salinity reduction goal due primarily to a higher percentage of the lower efficiency flood irrigation improvements, rather than the anticipated level of the higher efficiency sprinkler irrigation system improvements. The ration of lower efficiency to higher efficiency systems is reducing the net level of salinity reduction achieved by the on farm treatment. In addition an adjustment to the predicted salinity loading reduction from each type of improvement was made to assure the unit would not over report the net salinity reduction benefits. The result of the needed adjustment resulted in a smaller number of tons reported for each individual project. The unit is lagging in the concurrent

habitat replacement due to the results of a new field analysis to track the habitat projects applied, and to determine if the applied projects met suitable salinity replacement habitat. The data collected during the field review resulted in a reduction in the number of acres applied and maintained from what was previously reported. Some of the smaller habitat projects had not been maintained and some of the earlier projects could not be tracked through the administrative record to determine if the project as applied and maintained, still met suitable replacement habitat requirements. The current acreage number reflects suitable wildlife habitat replacement projects that are still in place, being maintained, and can be tracked.

The Mancos Valley Project is at about half of the acreage treatment goal, but is at 37 percent of the salinity ton reduction goal due primarily to a lower amount of off farm irrigation delivery treatments reported than was originally anticipated. Several of the irrigation delivery systems in the area have applied for financial assistance through various USDI, USDA, and other funding programs, however they have not competed successfully for the limited funds due to the relatively lower salinity loading rate in this small project area. With the limited amount of irrigation delivery improvement funding, both the off farm and near farm irrigation delivery salinity reporting is lagging behind net project goals. If additional funding for the off farm delivery is not available, it is unlikely the unit will reach full implementation goals in the foreseeable future. The project exceeds the concurrent habitat replacements goals significantly, and most likely will have enough salinity replacement habitat projects in place to meet full project implementation goals, if all of the acres are eventually treated. The close proximity of this project to the McELmo Creek unit could provide additional habitat values for both areas in the future if needed.

The Silt Project acreage and salinity reduction goals are tracking together and it is not know at this time how many additional irrigated acres may be treated. The number of applicants has been low the past three years. This may be due in part to recreational and other rural-urban development. Some of the parcels are being split into smaller units and there has been a significant change in land ownership from agriculture to hobby type farms and smaller irrigated fields. Many of the urban type landowners may not meet NRCS program eligibility and/or may not be interested in making irrigation improvements or need the financial assistance if they do make an improvement. The project is also lagging behind both the concurrent goal of 31 acres of replacement habitat and the full project implementation of 50 acres of salinity habitat replacement. The final habitat replacement goal may need to be adjusted if the project does not achieve the predicted irrigation improvement goals.

Out-of Project Area Tier 2 utilizes small amounts of designated salinity funding to cost-share individual irrigation improvement projects within the Colorado River basin outside of designated salinity control units to accomplish additional salinity control. The OPA projects provide a way to achieve extra salinity control benefits with funds un-used within the designated salinity control units. The USGS SPARROW model identified salt loading rates for catchments within the entire upper Colorado River Basin and those rates are used to predict a salt load reduction for each individual project. The OPA projects selected continue to offer a very cost-effective way to accomplish additional salinity control to help supplement program goals.

Colorado Salinity Control Units