APPENDIX A

Well Monitoring Data

Groundwater Levels Monitoring Field Sheet

Site	Well ID	Casing Height	Participants	Date	Time	Water Level Reading	Water Depth (Reading	Comments/Observations
Rincon Siphon	RS-MW-4	2.95	Brett Arp	15 Oct 2018	1215	6.5	3.55	
	RS-MW-6	3.05	Brett Arp	15 Oct 2018	1223	dry	dry	weight stopped 6'8"
	RS-MW-7	3.51	Brett Arp	15 Oct 2018	1240	dry	dry	weight stopped 11'1"

RS-MW-6 298597E 3617729 N

RS-MW-7 298994 E 3617974 N

Groundwater Levels Monitoring Field Sheet

Site	Well ID	Casing Height	Participants	Date	Time	Water Level Reading	Water Depth (Reading	Comments/Observations
Rincon Siphon	RS-MW-4	2.95	Brett	12/6/18	1630	6.35'	3.35'	
	RS-MW-6	3.05	Brett	12/6/18	1645	dry	—	
	RS-MW-7	3.51	Brett	12/6/18	1700	10.05'	5.9'	

Groundwater Levels Monitoring Field Sheet

Site	Well ID	Casing Height	Participants	Date	Time	Water Level Reading	Water Depth (Reading	Comments/Observations
Rincon Siphon	RS-MW-4	2.95	CB	21 May 2019	1130	17.55	5.72	casing height 3.28 top of water 8.55
	RS-MW-6	3.05	CB	21 May 2019	1142	dry		
	RS-MW-7	3.51	CB	21 May 2019	1149	dry		

Groundwater Levels Monitoring Field Sheet

Site	Well ID	Casing Height	Participants	Date	Time	Water Level Reading	Water Depth (Reading	Comments/Observations
Rincon Siphon	RS-MW-4	2.95	CB	7/18/19	1050	3.38	0.43	
	RS-MW-6	3.05	CB	7/18/19	1122	5.38	2.33	
	RS-MW-7	3.51	CB	7/18/19	1133	8.62	5.11	

Groundwater Levels Monitoring Field Sheet

Site	Well ID	Casing Height	Participants	Date	Time	Water Level Reading	Water Depth (Reading	Comments/Observations
Rincon Siphon	RS-MW-4	2.95	CB	10/14/19	0935	6.04	3.09	
	RS-MW-6	3.05	CB	10/14/19	1026	—	—	could not open due to wasp nest
	RS-MW-7	3.51	CB	10/14/19	1033	10.88	7.37	

Groundwater Levels Monitoring Field Sheet

Site	Well ID	Casing Height	Participants	Date	Time	Water Level Reading	Water Depth (Reading	Comments/Observations
Rincon Siphon	RS-MW-4	2.95	CB	21 April 2020	1230	4.85	1.9	
	RS-MW-6	3.05	CB	21 April 2020	1215	6.89	3.84	
	RS-MW-7	3.51	CB	21 April 2020	1200	9.38	5.87	

Groundwater Levels Monitoring Field Sheet

Site	Well ID	Casing Height	Participants	Date	Time	Water Level Reading	Water Depth (Reading	Comments/Observations
Rincon Siphon	RS-MW-4	2.95	CB	7/20/2020	0715	3.9	0.95	
	RS-MW-6	3.05	CB	7/20/2020	0700	4.33	1.28	
	RS-MW-7	3.51	CB	7/20/2020	0640	8.66	5.15	

Groundwater Levels Monitoring Field Sheet

Site	Well ID	Casing Height	Participants	Date	Time	Water Level Reading	Water Depth (Reading	Comments/Observations
Rincon Siphon	RS-MW-4	2.95	CB	10/9/2020	0730	7.68	4.73	
	RS-MW-6	3.05	CB	10/9/2020	0715	6.1	3.05	
	RS-MW-7	3.51	CB	10/9/2020	0645	11.48	7.97	

APPENDIX B

Planting and Monitoring Datasheets

Pre-Implementation Qualitative Monitoring Field Sheet

Site Thurman I Date 15 October 2018

Participants Charles Britt, Wendy Argo Target habitat

Document conditions at restoration site prior to restoration work implementation:

Identifiable Native Species	Abundance (Sporadic individuals, Low, Moderate, High)	Comments
willow	Moderate	concentrated at river mostly @ mouth of arroyo
salt bush	sporadic	
cottonwood	sporadic	at mouth of arroyo (12 total)
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Comments**
Saltcedar	Moderate	
Kochia	Moderate	from level road towards river
Russian thistle	~~tons~~ moderate	

General Site Conditions: open to the east w/ kochia & thistle; salt cedar willows thick at river bank; cattails; salt cedar behind the burro bush along south side of arroyo. 12 cottonwoods @ mouth of arroyo, also 3 clumps willows saltbush

Observed Wildlife: red-winged blackbird; red tail hawk; yellow rumped warbler barn swallow; GBH; Mallard; blue-winged teal; gadwall

Photos Taken: Photopoints established - 3

max height of native vegetation ~20' for willows >35' cottonwood ~25

max height of non-native vegetation ~15'

OHWM is the top of the arroyo

Pre-Implementation Qualitative Monitoring Field Sheet

Site Thurman II Date 15 October 2018

Participants Charles Britt, Wendy Arjo Target habitat

Document conditions at restoration site prior to restoration work implernentation:

Identifiable Native Species	Abundance (Sporadic individuals, Low, Moderate, High)	Comments
willow	Moderate @ river	thick near river and mouth of arroyo
cattails	Moderate	
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Comments**
Saltcedar	Sporadic - low	
Kochia	Moderate	from rd to riparian
Russian thistle	low	

along west side of arroyo

General Site Conditions: (Gooddings) tree willow on east side of arroyo; coyote willow in arroyo near mouth, lines arroyo on east then a gap until river; cattails at mouth salt cedar behind the willow. Island melds into bank area large cedar near river. Sporadic on west side of arroyo. Coyote willows @ arroyo mouth

Observed Wildlife: yellow headed blackbird; Say's phoebe; harrier

Photos Taken: Photopoints - 3 established

max height of native vegetation 20'

max height of non-native vegetation +30'

OHWM @ top of arroyo

Planting Field Sheet

Site ____Thurman I_____ Date Planted __November-December 2018___

Participants _____L. Ross_____ Auger Depth _____N/A_____

Species	# Planted	Stock/Origin	Comments
Coyote Willow	9,420 (estimated)	transplants	3,140 linear feet
Goodding's Willow			
Cottonwood			
Long Stem Shrub (specify in comments)			
Other			

General location of trees planted: _____river bank_____ Area (acres) ____0.85_

Provide GPS coordinates of planting location or a sketch of site: see attached figure

THURMAN MITIGATION (IBWC CONTRACT NO. IBM150006) – SITE I

THURMAN I ROW DATA				
ROW	SUB (1,2)	SUB (3,4)	SUB (5,6)	TOTAL
M	226	40	0	266
N	261	0	0	261
O	241	0	0	241
P	263	0	0	263
Q	251	0	0	251
R	344	0	0	344
S	298	0	0	298
T	287	0	0	287
U	246	0	0	246
V	240	0	0	240
W	250	0	0	250
X	193	0	0	193
			TOTAL	3140

THURMAN I ROW COORDINATE DATA								
ROW	POINT 1		POINT 2		POINT 3		POINT 4	
M	32.68355210	-107.17822465	32.68318133	-107.17722620	32.68399209	-107.17793631	32.68339666	-107.17784990
N	32.68355374	-107.77997820	32.68324461	-107.17719787				
O	32.68357113	-107.17778979	32.68326976	-107.17724204				
P	32.68356924	-107.17793806	32.68324746	-107.17717784				
Q	32.68357582	-107.17795862	32.68329369	-107.17795862				
R	32.68285188	-107.17631827	32.68250705	-107.17523667				
S	32.68287380	-107.17631131	32.68257062	-107.17543817				
T	32.68292581	-107.17633302	32.68264019	-107.17550665				
U	32.68295389	-107.17633629	32.68270297	-107.17546072				
V	32.68297778	-107.17630033	32.68274551	-107.17545022				
W	32.68299052	-107.17630142	32.68272908	-107.17544823				
X								

Planting Field Sheet

Site ____Thurman II_____ Date Planted __November-December 2018____

Participants _____L. Ross_____ Auger Depth _____N/A_____

Species	# Planted	Stock/Origin	Comments
Coyote Willow	8,427 (estimated)	transplants	2,809 linear feet
Goodding's Willow			
Cottonwood			
Long Stem Shrub (specify in comments)			
Other			

General location of trees planted: _____river bank_____ Area (acres) _0.59____

Provide planting location or sketch of site: see attached figure

THURMAN MITIGATION (IBWC CONTRACT NO. IBM15D0006) – SITE II

THURMAN II ROW DATA				
ROW	SUB (1,2)	SUB (3,4)	SUB (5,6)	TOTAL
A	97	62	0	159
B	94	44	0	138
C	83	58	0	141
D	80	57	0	137
E	88	58	145	291
F	221	0	0	221
G	234	0	0	234
H	163	215	214	592
I	173	0	0	173
J	184	0	0	184
K	178	0	0	178
L	180	181	0	361
			TOTAL	2809

THURMAN II ROW COORDINATE DATA												
ROW	POINT 1		POINT 2		POINT 3		POINT 4		POINT 5		POINT 6	
A	32.6846	-107.1832	32.6847	-107.1857	32.6847	-107.1835	32.6846	-107.1838				
B	32.6847	-107.1833	32.6847	-107.1857	32.6847	-107.1835	32.6846	-107.1836				
C	32.6847	-107.1833	32.6847	-107.1852	32.6847	-107.1835	32.6846	-107.1836				
D	32.6847	-107.1834	32.6847	-107.1850	32.6847	-107.1836	32.6847	-107.1835				
E	32.6848	-107.1835	32.6847	-107.1847	32.6847	-107.1836	32.6847	-107.1835	32.6848	-107.1836	32.6849	-107.1833
F	32.6846	-107.1809	32.6846	-107.1816								
G	32.6846	-107.1809	32.6846	-107.1815								
H	32.6844	-107.1808	32.6846	-107.1813	32.6844	-107.1806	32.6846	-107.1812	32.6843	-107.1805	32.6845	-107.1812
I	32.6845	-107.1816	32.6846	-107.1823								
J	32.6845	-107.1816	32.6846	-107.1823								
K	32.6845	-107.1815	32.6846	-107.1822								
L	32.6844	-107.1814	32.6846	-107.1821	32.6844	-107.1814	32.6845	-107.1820				

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site Thurman I Date 12/7/2018

Participants C Britt Target Habitat Riparian

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote willow (*Salix exigua*)	Moderate	30	Along river edge
Cattail (*Typha latifolia*)	Low	5	Along river edge
Screwbean Mesquite (*Prosopis pubescens*)		5	Near river
Rio Grande cottonwood	Low	<1	Scattered throughout the site, away from river
Silverleaf nightshade	Low	1	Scattered throughout the site

Identifiable Exotic (Non-Native) Species	Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)	Percent Cover (Estimate)	Comments
Saltcedar	Low	<1%	Small individuals away from the river
Russian Thistle	High	50%	In flood plan between the river and levee

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) __40%_____

Success of plantings:

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
Coyote Willow	Assume 100% alive due to season	normal		4-9	A	A	A		Downstream = 4125
					D	D	D		
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High level of bareground (60%), occurring away from the river in the flood plain and due to ground disturbance. Salt cedar has been removed and piled. Island veg removal partially complete. Coyote willow tranplantation has occurred upstream of the arroyo. Arroyo cottonwoods downed and poles prepped but not planted.

Observed Wildlife: Sandhill Crane, Mourning Dove, Northern Harrier, Virden, White-crowned Sparrow, Mallard, Ruby-crowned Kinglet, Common Merganser, Chihuahuan Raven, House Finch, Yellow-rumped Warbler, Spotted Towhee, Botta's pocketgopher (mounds)

Photos Taken: See photo log. Photos were taken of general site conditions, coyote willow transplant areas (upstream/ downstream) or the arroyo, and island vegetation removal.

Coyote willow pole counts: Downstream area: 5 rows @ 275ft = 1375 linear feet. 3 poles/ft = 4125 poles.

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site Thurman II Date 12/7/2018

Participants C Britt Target Habitat Riparian

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote willow (*Salix exigua*)	Moderate	10	Along river edge and moutth of arroyo
Cattail (*Typha latifolia*)	Low	<5	Along river bank
Screwbean Mesquite (*Prosipsus pubescens*)	Low	1	River side
Alkali sacaton (*Sporobolus airoides*)	Low	<3	Scattered throughout the site, away from river
Muhly grass (*Muhlenbergia spp*)	Low	5	Scattered throughout the site
Pigweed (*Amaranthus spp.*)	Low	<3	Along arroyo banks
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Percent Cover (Estimate)**	**Comments**
Saltcedar	Low	<1%	Small individuals away from the river
Russian Thistle	High	30%	In flood plan between the river and levee
Kochia	High	20%	In flood plan between the river and levee

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) 40%

Success of plantings:

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
Coyote Willow	Assume 100% alive due to season	Normal		5-9 ft	A	A	A		Uptream = 2475 Downstream = 5070
				5-9 ft	D	D	D		
Goodding's Willow					A	A	A		N/A
					D	D	D		
Cottonwood					A	A	A		N/A
					D	D	D		
Long Stem Shrub (specify in					A	A	A		N/A
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High level of bareground (60-70%), naturally occurring away from the river in tehe flood plain and due to ground disturbance. Salt cedar has been removed and piled. Island veg removal fairly complete. Coyote willow tranplantation has occurred. About 20% of coyote willows have leaves.

Observed Wildlife: Chihuahuan Raven, Sandhill Crane, Virden, Black Phoebe, Greater Roadrunner, White-crowned Sparrow, Cooper's Hawk, Crissal Thrasher, Red-tailed Hawk, Horned Lark, Spotted Towhee, Say's Phoebe, Northern Harrier.

Photos Taken: See photo log. Photos were taken of general site conditions, coyote willow transplant areas (upstream/ downstream) or the arroyo, and island vegetation removal.

Coyote willow pole counts: Upstream area: 5 rows @ 165ft = 825 linear feet. 3 poles/ft = 2475 poles (20% with leaves).
Downstream area: 5 rows @ 200ft and 3 rows @230ft (5% with leaves) = 1690 linear feet. 3 poles/ft = 5070 poles.

Additional native plants: Salt grass (1%), Goodding's willow (<1%), Sporobolus cryptandrus (1%), Silverleaf nightshade (1-5%), Seep willow (<1%)

Planting Field Sheet

Site Valley Creek Date Planted 12-6-19

Participants Ben, Gil M., Alfred C., Jimmy M. Auger Depth 3.5'

Species	# Planted	Stock/Origin	Comments
Coyote Willow			
Goodding's Willow			
Cottonwood			
Long Stem Shrub (specify in comments)	88	Hydra Nursery	NM Olive, False Indigo
Other			

General Location of trees planted At All sitting Areas (4) Area (acres) _____

Provide GPS coordinates of planting locations or a sketch of the site:

Planting Field Sheet

Site Thurman I & II Date Planted 12-10-19

Participants Gil M., Alfred C., Jimmy M. Auger Depth 3.5'

Species	# Planted	Stock/Origin	Comments
Coyote Willow			
Goodding's Willow			
Cottonwood	125	Hydra Nursery	Seep willow, NM Olive, Four wing, False Indigo, Three leaf Sumac
Long Stem Shrub (specify in comments)			
Other			

General Location of trees planted River bank / Sediment bank Area (acres) _____

Provide GPS coordinates of planting locations or a sketch of the site:

Planting Field Sheet

Site Thurman I & II Date Planted 12-10-19

Participants Gil M., Alfred C., Jimmy M. Auger Depth 3.5'

Species	# Planted	Stock/Origin	Comments
Coyote Willow			
Goodding's Willow			
Cottonwood	125	Hydra Nursery	Seep willow, NM Olive, Four wing, False Indigo, Three leaf Sumac
Long Stem Shrub (specify in comments)			
Other			

General Location of trees planted River bank / Sediment bank Area (acres) _____

Provide GPS coordinates of planting locations or a sketch of the site:

Planting Field Sheet

Site Thurman I Date Planted Feb 4-5 2020

Participants Ben, Jake, Alfred Auger Depth 8'-10'

Species	# Planted	Stock/Origin	Comments
Coyote Willow	278	Hydra Nursery	
Goodding's Willow	134	Hydra Nursery	
Cottonwood	27	Hydra Nursery	
Long Stem Shrub (specify in comments)	18	Hydra Nursery	
Other			

General Location of trees planted river basin & Sediment basin Area (acres) _____

Provide GPS coordinates of planting locations or a sketch of the site:

Planting Field Sheet

Site Thurman II Date Planted Feb 6, 2020

Participants Gil, Jake, Alfred Auger Depth 8'-10'

Species	# Planted	Stock/Origin	Comments
Coyote Willow	180	Hydra Nursery	
Goodding's Willow	100	Hydra Nursery	
Cottonwood	26	Hydra Nursery	
Long Stem Shrub (specify in comments)	18	Hydra Nursery	
Other			

General Location of trees planted River basin & Sediment basin Area (acres) _____

Provide GPS coordinates of planting locations or a sketch of the site:

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site: Thurman I | Date: 21-May-2019

Participants: Charles Britt | Target Habitat: Riparian

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	10	Along river
Cattail (*Typhus latifolia*)	Low	<1	Along river
Screwbean Mesquite (*Prospis pubescens*)	Low	5	Near river
Rio Grande Cottonwood	Low	<1	isolated
Silverleaf nightshade	Low	1	Scattered throughout
Hoary Aster (*Dieteria canescens*)	Low	1	Scattered in disturbed areas
Rio Grande greenthread (*Thelesperma megapoticum*)	Low	1	Scattered in disturbed areas

Identifiable Exotic (Non-Native) Species	Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)	Percent Cover (Estimate)	Comments
Saltcedar	Sporadic	1	Small individuals scattered
Russian thistle	Moderate	5	Treated? Seems all dead

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) 20

Success of plantings:

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
Coyote Willow	Upstream	normal		3 - 7 ft	A	A	A	99% alive	3750 poles
	Downstream	normal		same	D	D	D	99% alive	6300 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High percent of baregroud, especially away from the river. No successful cottonwood poles were observed. There are 3 debris piles. Most salt cedar was removed but small individuals are scattered. Coyote willow transplants have been added downstream of the arroyo. Island removed

Observed Wildlife: Western Wood-Pewee, Gambel's Quail, Mourning Dove, Red-winged Blackbird, Wilson's Warbler, Chipping Sparrow, Common Yellowthroat, Cliff Swallow, Yellow Warbler, Killdeer, Brown-headed Cowbird, Black Phoebe, Turkey Vulture.

Photos Taken: See photo log. Photos were taken of general site conditions, coyote willow transplant areas (upstream/ downstream) or the arroyo, and island vegetation removal.

Additional plants: Buffalo gourd (*Cucubita foetidissima*), Seepwillow (*Baccharis salicifolia*)

Coyote willow pole counts: Downstream area: 7 rows @ 300ft = 2100 linear feet. 3 poles/ft = 6300 poles.
Coyote willow pole counts: Upstream area: 5 rows @ 250ft = 1250 linear feet. 3 poles/ft = 3750 poles.

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site Thurman II Date 21-May-2019

Participants Charles Britt Target Habitat Riparian

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	20%	Riverside
Cattail (*Typha latifolia*)	Low	1%	Riverside
Screwbean Mesquite	Low	1%	Scattered
Alkali sacaton	Low	5%	Near northern arroyo
Muhly grass	Low	1%	Near river
Pigweed	Moderate	5%	Scattered
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Percent Cover (Estimate)**	**Comments**
Saltcedar	Low	<1%	Scattered
Russian thistle	Low	1%	Dead?

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) 30%

Success of plantings:

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
Coyote Willow	Downstream	stressed		2-8	A	A	A	95% alive	1875 poles
	Upstream	stressed		2-8	D	D	D	90% alive	6150 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: Bareground 60-70%. Salt cedar has been removed and piled into 6 debris piles. Island vegetation was removed. Coyote willow transplants upstream and downstream of the arroyo. Coyote willows at the confluence have been removed.

Observed Wildlife: Mallard, Gambel's Quail, Barn Swallow, Mourning Dove, Red-winged Blackbird, Killdeer, House Finch, Northern Mockingbird.

Photos Taken: See photolog.

Other plants: Tree willow (1), kochia (1%)

Coyote willow pole counts: Downstream area: 5 rows @ 410ft. 3 poles/ft = 6150 poles

Downstream area: 5 rows @ 125 = 625 linear feet. 3 poles/ft = 1875 poles.

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site Thurman I Date 18-July-2019

Participants Charles Britt Target Habitat Riparian

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	50	Along river
Cattail (*Typhus latifolia*)	Low	<1	Along river
Screwbean Mesquite (*Prospis pubescens*)	Low	2	Near river
Rio Grande Cottonwood	Low	<1	isolated
Silverleaf nightshade	Low	5	Scattered throughout
Hoary Aster (*Dieteria canescens*)	Low	1	Scattered in disturbed areas
Rio Grande greenthread (*Thelesperma megapoticum*)	Low	<1	Scattered in disturbed areas
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Percent Cover (Estimate)**	**Comments**
Saltcedar	Sporadic	20	Small individuals scattered
Russian thistle	Moderate	5	Treated? Seems all dead
Kochia	Moderate	5	Scattered across site.
Siberian Elm	Sporadic	<1%	2 individuals

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) 25

Success of plantings:

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
Coyote Willow	Upstream	normal		3 - 7 ft	A	A	A	95% alive	3750 poles
	Downstream	normal		same	D	D	D	70% alive	6300 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High percent of baregroud, especially away from the river. Some of the bareground was tilled.Debris piles still there. Most salt cedar and kochia increasing in disturbed areas. Coyote willow transplants have higher mortality in back rows. Someone has placed bee boxes on site.

Observed Wildlife: Desert Cottontail, Yellow-breasted Chat, Yellow Warbler, Brewer's Blackbird, Gambel's Quail, White-winged Dove, Mourning Dove, Red-winged Blackbird, Brown-headed Cowbird, Common Yellow-throat, Variegated Frittilary, Southern Dogface, Honeybees, whiptail lizard (*Aspidoscelis spp*).

Photos Taken: See photo log. Photos were taken of coyote willow transplant areas (upstream/downstream).

Additional plants: Buffalo gourd (Cucubita foetidissima) (1-2 inds), Seepwillow (Baccharis salicifolia) (5%), *Isocoma pluriflora*, Mulberry (1 ind), Ipomoea spp (2-3 inds), Purslane (*Portulaca oleracea*) (1%).

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site Thurman II Date 18-July-2019

Participants Charles Britt Target Habitat Riparian

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	30%	Riverside
Cattail (*Typha latifolia*)	Low	1%	Riverside
Screwbean Mesquite	Low	5%	Scattered
Alkali sacaton	Low	5%	Near northern arroyo
Muhly grass	Low	5%	Near river
Goldenrod (*Isocoma pluriflora*)	Moderate	20%	Scattered
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Percent Cover (Estimate)**	**Comments**
Saltcedar	Low	25%	Lots of recruitment throughout site
Russian thistle	Low	1%	Dead?
Kochia	Moderate	10	Scattered
Bermudagrass	Sporadic	1%	Scattered

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) ___35%_____

Success of plantings:

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
Coyote Willow	Downstream	stressed		2-8	A	A	A	80-85% alive	1875 poles
	Upstream	stressed		2-8	D	D	D	80% alive	6150 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High percent of baregroud, especially away from the river. Some of the bareground was tilled. Debris piles still there. Most salt cedar and kochia increasing in disturbed areas. Coyote willow transplants have higher mortality in back rows.

Observed Wildlife: Gambel's Quail, Barn Swallow, Mourning Dove, Red-winged Blackbird, House Finch, Northern Mockingbird, European Starling, clouded white, pipevine swallowtail, whiptail lizard (*Aspidoscelis spp*), bullfrog).

Photos Taken: See photolog.

Other plants: Tree willow (1), Glandularia bipenetifida (1%), silverleaf nightshade (5%), seepwillow (5%), Buffalo gourd (1%)

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site Thurman I Date 14-Oct-2019

Participants Charles Britt Target Habitat Riparian

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	50	Along river
Cattail (*Typhus latifolia*)	Low	<1	Along river
Screwbean Mesquite (*Prospis pubescens*)	Low	2	Near river
Rio Grande Cottonwood	Low	<1	isolated
Silverleaf nightshade	Low	5	Scattered throughout
Hoary Aster (*Dieteria canescens*)	Low	1	Scattered in disturbed areas
Rio Grande greenthread (*Thelesperma megapoticum*)	Low	<1	Scattered in disturbed areas
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Percent Cover (Estimate)**	**Comments**
Saltcedar	Sporadic	10	Increasing across the southern area
Russian thistle	Moderate	50	Is very abundant away from river and in transplants
Kochia	Moderate	5	Scattered across site.
Siberian Elm	Sporadic	<1%	2 individuals

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) _30_____

Success of plantings:

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
Coyote Willow	Upstream	normal		3 - 7 ft	A	A	A	95% alive	3750 poles
	Downstream	normal		same	D	D	D	70% alive	6300 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High percent of baregroud, especially away from the river. Some of the bareground was tilled. In these areas Russian thistle has really expanded. Debris piles still there. Most salt cedar and kochia increasing in disturbed areas. Coyote willow transplants have higher mortality in back rows. Transplant areas - lots of Russian thistle.

Observed Wildlife: Desert Cottontail, Verdin, Chipping Sparrow, Spotted Towhee, House Finch, Sandhill Cranes (flying overhead), Ladder-backed Woodpecker, Bewick's Wren, Black Phoebe

Photos Taken: See photo log. Photos were taken of coyote willow transplant areas (upstream/downstream).

Additional plants: Buffalo gourd (Cucubita foetidissima) (5 inds), Seepwillow (Baccharis salicifolia) (5%), *Isocoma pluriflora*, Mulberry (1 ind), Ipomoea spp (2-3 inds), Purslane (*Portulaca oleracea*) (1%), honey mesquite (2%).

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site Thurman II Date 14-October-2019

Participants Charles Britt Target Habitat Riparian

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	20%	Riverside
Wolfberry	Low	2%	Away from river
Screwbean Mesquite	Low	5%	Scattered
Alkali sacaton	Low	5%	Near northern arroyo
Muhly grass	Low	5%	Near river
Goldenrod (*Isocoma pluriflora*)	Moderate	20%	Scattered
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Percent Cover (Estimate)**	**Comments**
Saltcedar	Low	10%	Lots of recruitment throughout site
Russian thistle	Low	10%	Rebounding
Kochia	Moderate	30	Increasing in tilled areas and transplants
Bermudagrass	Sporadic	1%	Scattered

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) ___35%_____

Success of plantings:

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
Coyote Willow	Downstream	stressed		2-8	A	A	A	80-85% alive	1875 poles
	Upstream	stressed		2-8	D	D	D	80% alive	6150 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High percent of baregroud, especially away from the river. Some of the bareground was tilled. Debris piles still there. Most salt cedar and kochia increasing in disturbed areas (including tilled areas). Coyote willow transplants have higher mortality in back rows.

Observed Wildlife: American Pipit, Chihuahuan Raven, House Finch, Yellow-rumped Warbler, Chipping Sparrow, Say's Phoebe, Northern Harrier, Killdeer, Northern Shoveler, Black Phoebe, Spotted Sandpiper, White-crowned Sparrow, House Wren, Gambel's Quail, Lincoln's Sparrow, Swallow spp

Photos Taken: See photolog.

Other plants: Gooddings willow (1), Glandularia bipenetifida (1%), silverleaf nightshade (5%), seepwillow (5%), Buffalo gourd (1%), honey mesquite (5%), Amaranthus (5%), Typhus (1%), goatheads (2%)

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site Thurman I Date 21-April-2020

Participants Charles Britt Target Habitat Riparian

Same as Oct 2019 visit

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	50	Along river
Cattail (*Typhus latifolia*)	Low	<1	Along river
Screwbean Mesquite (*Prospis pubescens*)	Low	2	Near river
Rio Grande Cottonwood	Low	<1	isolated
Silverleaf nightshade	Low	5	Scattered throughout
Hoary Aster (*Dieteria canescens*)	Low	1	Scattered in disturbed areas
Rio Grande greenthread (*Thelesperma megapoticum*)	Low	<1	Scattered in disturbed areas
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Percent Cover (Estimate)**	**Comments**
Saltcedar	Sporadic	10	Increasing across the southern area
Russian thistle	Moderate	50	Is very abundant away from river and in transplants
Kochia	Moderate	5	Scattered across site.
Siberian Elm	Sporadic	<1%	2 individuals

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) _30_____

Success of plantings:

Same as October 2019 visit

See veg count table for plantings totals. All individuals were normal and alive.

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
transplants only Coyote Willow	Upstream	normal		3 - 7 ft	A	A	A	95% alive	3750 poles
	Downstream	normal		same	D	D	D	70% alive	6300 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High percent of baregroud, especially away from the river. Some of the bareground was tilled. In these areas Russian thistle and kochia has really expanded. Debris piles have been removed. Most salt cedar and kochia increasing in disturbed areas. Coyote willow transplants have higher mortality in back rows. Transplant areas - lots of Russian thistle.

Observed Wildlife: Gambel's Quail, Ash-throated Flycatcher, Cooper's Hawk, Red-winged Blackbird, Killdeer, Black Phoebe, Cliff Swallow, Common Yellowthroat, Sora, Northern Shoveler, Mourning Dove, White-winged Dove, American Kestrel, House Finch, Yellow-rumped Warbler, Painted Bunting.

Photos Taken: See photo log. Photos were taken of coyote willow transplant areas (upstream/downstream).

Additional plants: Buffalo gourd (Cucubita foetidissima) (5 inds), Seepwillow (Baccharis salicifolia) (5%), *Isocoma pluriflora*, Mulberry (1 ind), Ipomoea spp (2-3 inds), Purslane (*Portulaca oleracea*) (1%), honey mesquite (2%).

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site: Thurman II Date: 21-April 2020

Participants: Charles Britt Target Habitat: Riparian

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	20%	Riverside
Wolfberry	Low	2%	Away from river
Screwbean Mesquite	Low	5%	Scattered
Alkali sacaton	Low	5%	Near northern arroyo
Muhly grass	Low	5%	Near river
Goldenrod (*Isocoma pluriflora*)	Moderate	20%	Scattered

Same as Oct 2019 visit

Identifiable Exotic (Non-Native) Species	Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)	Percent Cover (Estimate)	Comments
Saltcedar	Low	10%	Lots of recruitment throughout site
Russian thistle	Low	10%	Rebounding
Kochia	Moderate	30	Increasing in tilled areas and transplants
Bermudagrass	Sporadic	1%	Scattered

Same as Oct 2019 visit

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) ___35%_____

Success of plantings:

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
transplants only Coyote Willow	Downstream	stressed		2-8	A	A	A	80-85% alive	1875 poles
	Upstream	stressed		2-8	D	D	D	80% alive	6150 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

Same as Oct 2019 visit

See veg count table for plantings totals. All individuals were normal and alive.

General Site Conditions: High percent of bareground, especially away from the river. Some of the bareground was tilled. Debris piles removed. Most salt cedar and kochia increasing in disturbed areas (including tilled areas). Coyote willow transplants have higher mortality in back rows. Plantings have been established, except grass.

Observed Wildlife: Cliff Swallow, Yellow-rumped Warbler, House Finch, Gambel's Quail, Red-winged Blackbird, Solitary Sandpiper, Broad-tailed Hummingbird.

Photos Taken: See photolog.

Other plants: Gooddings willow (1), Glandularia bipenetifida (1%), silverleaf nightshade (5%), seepwillow (5%), Buffalo gourd (1%), honey mesquite (5%), Amaranthus (5%), Typhus (1%), goatheads (2%)

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site Thurman I Date 21-July-2020

Participants Charles Britt Target Habitat Riparian

Same as Apr 2020 visit

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	50	Along river
Cattail (*Typhus latifolia*)	Low	<1	Along river
Screwbean Mesquite (*Prospis pubescens*)	Low	2	Near river
Rio Grande Cottonwood	Low	<1	isolated
Silverleaf nightshade	Low	5	Scattered throughout
Hoary Aster (*Dieteria canescens*)	Low	1	Scattered in disturbed areas
Rio Grande greenthread (*Thelesperma megapoticum*)	Low	<1	Scattered in disturbed areas
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Percent Cover (Estimate)**	**Comments**
Saltcedar	Sporadic	10	Increasing across the southern area
Russian thistle	Moderate	50	Is very abundant away from river and in transplants
Kochia	Moderate	5	Scattered across site.
Siberian Elm	Sporadic	<1%	2 individuals

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) _30_____

Success of plantings:

Same as Apr 2020 visit

See veg count table for plantings totals. Almost all individuals were normal and alive.

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
transplants only Coyote Willow	Upstream	normal		3 - 7 ft	A	A	A	95% alive	3750 poles
	Downstream	normal		same	D	D	D	70% alive	6300 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High percent of baregroud, especially away from the river. Tilled have been seeded with grass. However, the truck the ~~conducted the seeding and watering of the grass drove through the tree/shrub plantings and some~~ mortality occurred. Debris piles have been removed. Most salt cedar and kochia are increasing in disturbed areas. Coyote willow transplants have higher mortality in back rows.

Observed Wildlife: Yellow-rumped Warbler, Yellow ~~Warbler, House Finch, Gambel's Quail, Killdeer, Yellow-headed Blackbird, Red-winged Blackbird, Yellow-~~breasted Chat, White-winged Dove, Mourning Dove, Desert Cottontail, Striped Skunk.

Photos Taken: See photo log. Photos were taken of coyote willow transplant areas (upstream/downstream).

Additional plants: Buffalo gourd (Cucubita foetidissima) (5 inds), Seepwillow (Baccharis salicifolia) (5%), *Isocoma pluriflora*, Mulberry (1 ind), Ipomoea spp (2-3 inds), Purslane (*Portulaca oleracea*) (1%), honey mesquite (2%).

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site: Thurman II Date: 21-July-2020

Participants: Charles Britt Target Habitat: Riparian

Same as Apr 2020 visit

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	20%	Riverside
Wolfberry	Low	2%	Away from river
Screwbean Mesquite	Low	5%	Scattered
Alkali sacaton	Low	5%	Near northern arroyo
Muhly grass	Low	5%	Near river
Goldenrod (*Isocoma pluriflora*)	Moderate	20%	Scattered

Same as Apr 2020 visit

Identifiable Exotic (Non-Native) Species	Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)	Percent Cover (Estimate)	Comments
Saltcedar	Low	10%	Lots of recruitment throughout site
Russian thistle	Low	10%	Rebounding
Kochia	Moderate	20	Some treatment in planting areas
Bermudagrass	Sporadic	1%	reduced cover

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) ___35%_____

Success of plantings:

Same as Apr 2020 visit

See veg count table for plantings totals. Almost all individuals were normal and alive.

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
transplants only Coyote Willow	Downstream	stressed		2-8	A	A	A 80-85% alive		1875 poles
	Upstream	stressed		2-8	D	D	D 80% alive		6150 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High percent of bareground, especially away from the river. Tilled areas have been seeded with grass. During grass seeding and watering, some trees and shrubs were driven over. Debris piles removed. Most salt cedar and kochia increasing in disturbed areas (including tilled areas), however, areas with plantings have been treated so invasive cover has decreased in these areas. Coyote willow transplants have higher mortality in back rows.

Observed Wildlife: Yellow-rumped Warbler, Yellow, Warbler, House Finch, Gambel's Quail, Killdeer, Yellow-headed Blackbird, Red-winged Blackbird, Yellow-breasted Chat, White-winged Dove, Mourning Dove

Photos Taken: See photolog.

Other plants: Gooddings willow (1), Glandularia bipenetifida (1%), silverleaf nightshade (5%), seepwillow (5%), Buffalo gourd (1%), honey mesquite (5%), Amaranthus (5%), Typhus (1%), goatheads (2%)

Planting Field Sheet

Site: Thurman I Date Planted: 8/18/20

Participants: G.I Marcos Auger Depth: _____

Species	# Planted	Stock/Origin	Comments
Coyote Willow			
Goodding's Willow			
Cottonwood			
Long Stem Shrub (specify in comments)	9	Hydra Nursery	False Indigo, Salt bush Wm olive
Other			

General Location of trees planted: North Side of Channel Area (acres): _____

Planting Field Sheet

Site: Thurman II Date Planted: 8/18/20

Participants: G.I, Marcos Auger Depth: _____

Species	# Planted	Stock/Origin	Comments
Coyote Willow			
Goodding's Willow			
Cottonwood			
Long Stem Shrub (specify in comments)	9	Hydra Nursery	False Indigo. Salt bush Wm olive
Other			

General Location of trees planted: North Side Channel Area (acres): _____

Provide GPS [illegible]

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site Thurman I Date 9-Oct-2020

Participants Charles Britt Target Habitat Riparian

Same as Jul 2020 visit

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	50	Along river
Cattail (*Typhus latifolia*)	Low	<1	Along river
Screwbean Mesquite (*Prospis pubescens*)	Low	2	Near river
Rio Grande Cottonwood	Low	<1	isolated
Silverleaf nightshade	Low	5	Scattered throughout
Amaranthus	Moderate	10	Scattered in disturbed areas
Rio Grande greenthread (*Thelesperma megapoticum*)	Low	<1	Scattered in disturbed areas
Identifiable Exotic (Non-Native) Species	**Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)**	**Percent Cover (Estimate)**	**Comments**
Saltcedar	Sporadic	10	Increasing across the southern area
Russian thistle	Moderate	50	Is very abundant away from river and in transplants
Kochia	Moderate	5	Scattered across site.
Siberian Elm	Sporadic	<1%	2 individuals

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) _30_____

Success of plantings:

Same as Jul 2020 visit

See veg count table for plantings totals. Almost all individuals were normal and alive.

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
transplants only Coyote Willow	Upstream	normal		3 - 7 ft	A	A	A	95% alive	3750 poles
	Downstream	normal		same	D	D	D	70% alive	6300 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

General Site Conditions: High percent of baregroud, especially away from the river. Tilled have been seeded with grass; blue grama observed. ~~However, the truck the conducted the seeding and watering of the grass drove through the tree/~~ shrub plantings and some mortality occurred. Most salt cedar and kochia are increasing in disturbed areas. Coyote willow transplants have higher mortality in back rows. Amaranthus thick in transplant areas. House

Observed Wildlife: ~~Finch, Gambel's Quail, Killdeer, Red-winged Blackbird, White-winged Dove, Mourning Dove.~~

Photos Taken: See photo log.

Additional plants: Seepwillow (Baccharis salicifolia) (5%), *Isocoma pluriflora*, Mulberry (1 ind), Ipomoea spp (2-3 inds), Purslane (*Portulaca oleracea*) (1%), honey mesquite (3%).

Restoration Work Effectiveness - Qualitative Monitoring Field Sheet

Site: Thurman II | Date: 9-Oct-2020

Participants: Charles Britt | Target Habitat: Riparian

Identifiable Native Species	Abundance (None, Sporadic individuals, Low, Moderate, High)	Percent Cover (Estimate)	Comments
Coyote Willow (*Salix exigua*)	Moderate	20%	Riverside
Amaranthus	High	40%	Everywhere
Screwbean Mesquite	Low	5%	Scattered
Alkali sacaton	Low	5%	Near northern arroyo
Muhly grass	Low	5%	Near river
Goldenrod (*Isocoma pluriflora*)	Moderate	20%	Scattered

Same as Jul 2020 visit

Identifiable Exotic (Non-Native) Species	Abundance (None, Sporadic individuals, Low, Moderate, High, Monotypic)	Percent Cover (Estimate)	Comments
Saltcedar	Low	10%	Lots of recruitment throughout site
Russian thistle	Low	10%	Rebounding
Kochia	Moderate	20	Some treatment in planting areas
Bermudagrass	Sporadic	1%	reduced cover

Same as Jul 2020 visit

OVERALL PERCENT COVER OF VEGETATION AT SITE (planted and naturally recruited) ___35%_____

Success of plantings:

Species	General Planting Area (s)	Vigor (stressed, normal, thriving)	Density (stems /acre)	Height Range	Survival Rate (average of 3 subplot counts) A = Alive, D = Dead Average = Sum A/ (Sum D + Sum A)				Comments
					Plot 1	Plot 2	Plot 3	Average	
transplants only Coyote Willow	Downstream	stressed		2-8	A	A	A 80-85% alive		1875 poles
	Upstream	stressed		2-8	D	D	D 80% alive		6150 poles
Goodding's Willow					A	A	A		
					D	D	D		
Cottonwood					A	A	A		
					D	D	D		
Long Stem Shrub (specify in					A	A	A		
					D	D	D		
Other					A	A	A		
					D	D	D		

Same as Jul 2020 visit

See veg count table for plantings totals. Almost all individuals were normal and alive.

General Site Conditions: High percent of bareground, especially away from the river. Tilled areas have been seeded with grass; some blue grama present. During grass seeding and watering, some trees and shrubs were driven over. Most salt cedar and kochia increasing in disturbed areas (including tilled areas), however, areas with plantings have been treated so invasive cover has decreased in these areas. Coyote willow transplants have higher mortality in back rows. Amaranthus think in this area. Blue-winged Teal, House Finch, Gambel's Quail, Killdeer, Red-winged Blackbird, Yellow-breasted Chat, White-winged Dove, Mourning Dove, Chipping Sparrows

Observed Wildlife:

Photos Taken: See photolog.

Other plants: Gooddings willow (1), Glandularia bipenetifida (1%), silverleaf nightshade (5%), seepwillow (5%), Buffalo gourd (1%), honey mesquite (5%), Typhus (1%), goatheads (2%)

APPENDIX C

Photo Points

Photo Point 1 Target 1

15 October 2018

7 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

9 October 2020

Photo Point 1 Target 2

15 October 2018

6 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

9 October 2020

Photo Point 1 Target 3

 15 October 2018	 6 December 2018
 21 May 2019	 18 July 2019
 14 October 2019	 21 April 2020
 21 July 2020	 9 October 2020

Photo Point 2 Target 1

 15 October 2018	 6 December 2018
 21 May 2019	 18 July 2019
 14 October 2019	 21 April 2020
 21 July 2020	 9 October 2020

Photo Point 2 Target 2

 15 October 2018	 6 December 2018
 21 May 2019	 18 July 2019
 14 October 2019	 21 April 2020
 21 July 2020	 9 October 2020

Photo Point 2 Target 3

15 October 2018

6 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

9 October 2020

Photo Point 3 Target 1

 15 October 2018	 6 December 2018
 21 May 2019	 18 July 2019
 14 October 2019	 21 April 2020
 21 July 2020	 9 October 2020

Photo Point 3 Target 2

15 October 2018

6 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

9 October 2020

Photo Point 3 Target 3

 15 October 2018	 6 December 2018
 21 May 2019	 18 July 2019
 October 2019	 21 April 2020
 21 July 2020	 9 October 2020

Photo Point 1 Target 1

15 October 2018

7 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

09 October 2020

Photo Point 1 Target 2

15 October 2018

6 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

09 October 2020

Photo Point 1 Target 3

15 October 2018

6 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

09 October 2020

Photo Point 2 Target 1

 15 October 2018	 6 December 2018
 21 May 2019	 18 July 2019
 14 October 2019	 21 April 2020
 21 July 2020	 09 October 2020

Photo Point 2 Target 2

15 October 2018

6 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

09 October 2020

Photo Point 2 Target 3

15 October 2018

6 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

09 October 2020

Photo Point 3 Target 1

15 October 2018

6 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

09 October 2020

Photo Point 3 Target 2

15 October 2018

6 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

09 October 2020

Photo Point 3 Target 3

15 October 2018

6 December 2018

21 May 2019

18 July 2019

14 October 2019

21 April 2020

21 July 2020

09 October 2020

APPENDIX D

2019 USACE Mitigation Monitoring Report

Section A: General Project Information		
1. Project Name: Construction of Sediment Basins at Thurman I and II Arroyos in the Rio Grande Canalization Project	2. DA file number(s): Action No. SPA-2018-00084-LCO	3. Project type: NWP 43
4. Permittee, bank or in-lieu fee sponsor name and work phone number: Gilbert Anaya US International Boundary and Water Commission (915) 832-4702	5. Permittee, bank or in-lieu fee sponsor mailing address: International Boundary and Water Commission, US Section Environmental Division 4171 N. Mesa St., Bldg C, Ste. 100 El Paso, TX 79902-1441	6. Permittee, bank or in-lieu fee sponsor e-mail address: gilbert.anaya@ibwc.gov
7. Agent name and work phone number: Kelly Blough (915) 832-4734	8. Agent mailing address: International Boundary and Water Commission, US Section Environmental Division 4191 N. Mesa El Paso, TX 79902-1441	9. Agent e-mail address: Kelly.blough@ibwc.gov
Section B: Notice of Commencement/Completion of Compensatory Mitigation Project		
1. Commencement: Y ☒ N ☐ October 2018	2. Completion Y ☐ N ☒ Click here to enter a date	3. Financial assurance remains in place: Y ☒ N ☐
4. Requesting release of a financial assurance? Y ☐ N ☒	5. Name of contractor (if any): IDEALS-AGEISS	6. Phone number of contractor (if any): 360-742-3397
Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you may be subject to permit suspension, modification, or revocation.		
Section C: Mitigation Monitoring Status		
1. Final monitoring completed and verification requested? Y ☐ N ☒	2. Date of monitoring reported here: 14 October 2019	3. Monitoring report no. 1
4. Management and maintenance activities completed (for example: fencing installation/repair or trash removal (include dates): Saltcedar from both sites was removed and the island vegetation extracted. Willows from the islands were transplanted by February 2019 to both of the Thurman I and Thurman II river bank mitigation areas. Mitigation monitoring was conducted five times from the initiation of the project through 14 October 2019.		
5. Adaptive management activities completed (include dates): Cannot address at this time until all mitigation is completed.		
6. Performance standards		

Year	Performance Standard	Goal	Results
2019	Willows planted at 1,000 willows/acre	1,000 willows/acre	Approximately 9,420 willows planted in 0.85 acre at Thurman I and 8,427 willows in 0.59 acre planted at Thurman II
2019	Transplanted willow survival	65%	Thurman I – 83% and Thurman II – 80%

2019	No more than 20% of observed plants from measured plots can be nuisance species	< 20%	Range of invasive species distribution dependent on the species and the numbers are for the entire site (10-50%). The main species of concern, saltcedar, only represented 10% cover in the monitored transplanted willows.

7. Short statement on whether the performance standards are being met: The mitigation sites have not had the entire areas planted yet so some of the performance standards cannot be assessed. Those standards that are assessed are being met, although a more appropriate measure of nuisance species cover will need to be implemented in order to assess that performance standard more adequately. The main invasive species of concern identified in the adaptive management activities, saltcedar, represents only 10% cover in the transplanted willow area which meets the performance standard.

8. Conclusions and adaptive management activities proposed (addressing unresolved issues, failure to meet performance standards): Cannot address at this time until all mitigation is completed.

Section D: Photo Log

1. Number: Thurman I_02_05212019

2. Date: 21 May 2019

3. Compass direction taken:
Degrees: 280°
Cardinal/intercardinal: West

4. Coordinates (decimal degrees):
Latitude: 32.682914
Longitude: -107.176401

5. Photographer name: Charles Britt

Description: Coyote willow transplants downstream of Thurman I site

1. Number: Thurman I_05_05212019	
2. Date: 21 May 2019	
3. Compass direction taken: Degrees: 120° Cardinal/intercardinal: East-southeast	
4. Coordinates (decimal degrees): Latitude: 32.682726 Longitude: -107.176812	
5. Photographer name: Charles Britt	
Description: Island removal downstream at Thurman I	

1. Number: Thurman II_04_05212019	
2. Date: 21 May 2019	
3. Compass direction taken: Degrees: 270° Cardinal/intercardinal: West	
4. Coordinates (decimal degrees): Latitude: 32.684666 Longitude: -107.18089	
5. Photographer name: Charles Britt	
Description: Initiating transplants of willows at Thurman II	

1. Number: Thurman I_03_07182019	
2. Date: 18 July 2019	
3. Compass direction taken: Degrees: 190° Cardinal/intercardinal: South	
4. Coordinates (decimal degrees): Latitude: 32.682644 Longitude: -107.175328	
5. Photographer name: Charles Britt	
Description: Downstream coyote willow transplants at Thurman I.	

1. Number: Thurman II_01_07182019	
2. Date: 18 July 2019	
3. Compass direction taken: Degrees: 30° Cardinal/intercardinal: North-northeast	
4. Coordinates (decimal degrees): Latitude: 32.684833 Longitude: -107.183784	
5. Photographer name: Charles Britt	
Description: Upstream coyote willow transplants at Thurman I.	

1. Number: Thurman I_05_10142019	
2. Date: 14 October 2019	
3. Compass direction taken: Degrees: 275° Cardinal/intercardinal: West	
4. Coordinates (decimal degrees): Latitude: 32.684368 Longitude: -107.180925	
5. Photographer name: Charles Britt	
Description: Southern transplants at Thurman I.	

1. Number: Thurman II_01_10142019	
2. Date: 14 October 2019	
3. Compass direction taken: Degrees: 200° Cardinal/intercardinal: South-southwest	
4. Coordinates (decimal degrees): Latitude: 32.683879 Longitude: -107.176403	
5. Photographer name: Charles Britt	
Description: Sediment Trap at Thurman II.	

1. Number: Thurman II_05_10142019	
2. Date: 14 October 2019	
3. Compass direction taken: Degrees: 110° Cardinal/intercardinal: East-southeast	
4. Coordinates (decimal degrees): Latitude: 32.683325 Longitude: -107.177167	
5. Photographer name: Charles Britt	
Description: Area between the Thurman II sediment trap and the Rio Grande River.	

APPENDIX E

2020 USACE Mitigation Monitoring Report

Section A: General Project Information		
1. Project Name: Construction of Sediment Basins at Thurman I and II Arroyos in the Rio Grande Canalization Project	2. DA file number(s): Action No. SPA-2018-00084-LCO	3. Project type: NWP 43
4. Permittee, bank or in-lieu fee sponsor name and work phone number: Gilbert Anaya US International Boundary and Water Commission (915) 832-4702	5. Permittee, bank or in-lieu fee sponsor mailing address: International Boundary and Water Commission, US Section Environmental Division 4171 N. Mesa St., Bldg C, Ste. 100 El Paso, TX 79902-1441	6. Permittee, bank or in-lieu fee sponsor e-mail address: gilbert.anaya@ibwc.gov
7. Agent name and work phone number: Kelly Blough (915) 832-4734	8. Agent mailing address: International Boundary and Water Commission, US Section Environmental Division 4171 N. Mesa St., Bldg C, Ste. 100 El Paso, TX 79902-1441	9. Agent e-mail address: Kelly.blough@ibwc.gov
Section B: Notice of Commencement/Completion of Compensatory Mitigation Project		
1. Commencement: Y ☒ N ☐ October 2018	2. Completion Y ☐ N ☒ Click here to enter a date	3. Financial assurance remains in place: Y ☒ N ☐
4. Requesting release of a financial assurance? Y ☐ N ☒	5. Name of contractor (if any): IDEALS-AGEISS	6. Phone number of contractor (if any): 360-742-3397
Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you may be subject to permit suspension, modification, or revocation.		
Section C: Mitigation Monitoring Status		
1. Final monitoring completed and verification requested? Y ☐ N ☒	2. Date of monitoring reported here: 9 October 2020	3. Monitoring report no. 2
4. Management and maintenance activities completed (for example: fencing installation/repair or trash removal (include dates): Saltcedar from both sites was removed and the island vegetation extracted. Willows from the islands were transplanted by February 2019 to both of the Thurman I and Thurman II river bank mitigation areas. Longstem shrubs were planted in December 2019 and Goodding's willow and cottonwood pole plantings occurred in February 2020. Weekly watering of the plantings occurred from March through September 2020. Invasive species management occurred through the summer of 2020 by hand pulling and mowing around the planted areas and removing invasive species from the planting wells. Mitigation monitoring was conducted three times during 2020.		
5. Adaptive management activities completed (include dates): The adaptive management plan evaluates and recommends strategies to maintain and correct adverse environmental conditions at the onsite riparian zones along the river and embayment area. The specific actions of the plan would be implemented in the second year if more than 35% of the species have died, if the nuisance species are greater than 20%, and if the performance standards are not being met. Performance standards are being met and survivorship is high; therefore, the adaptive management plan is not necessary at this time.		

6. Performance standards			
Year	Performance Standard	Goal	Results
2020	Willows planted at 1,000 willows/acre	1,000 willows/acre	Within the Thurman I planted willow area (0.85 acre) 8,341 willows have survived. At Thurman II, 6,476 willows are alive within the 0.59-acre area planted.
2020	Transplanted willow survival	65%	Thurman I – 83% and Thurman II – 82%
2020	Planted vegetation survival for species other than the coyote willow transplants	65%	**Thurman I** Goodding's willows – 100% Cottonwood – 85% Coyote willows – 100% Longstem shrub – 90% **Thurman II** Goodding's willows – 94% Cottonwood – 100% Coyote willows – 100% Longstem shrub – 95%
2020	No more than 20% of observed plants from measured plots can be nuisance species	< 20%	Range of invasive species distribution dependent on the species and the numbers are for the entire site (5-50%). Invasive species cover within the planted pole and shrub area was less than the overall site as it was maintained throughout 2020. At Thurman I, 50% of the area not planted contained Russian thistle and kochia only accounted for 5 percent cover of the entire area. The main species of concern, saltcedar, only represented 10% cover in the monitored transplanted willows.
2020	Planted willows and underbrush coverage percentage	35%	This measure should actually be conducted in the spring of 2021, one full year after planting, in several specific plots that can be replicated year to year. However, as observed at the photos points (such as Thurman I- Photo Point 2-1, 2-2, 2-3 and Thurman II- Photo Point 2-3) native species cover has increased since initial planting at both sites.

7. Short statement on whether the performance standards are being met: Performance standards are being met and species survivorship is high. By the second growing season a more focused measure of nuisance species cover in the planting areas will need to be implemented in order to assess that performance standard more adequately. Currently we have assessed the invasive species cover of the entire site. The main invasive species of concern identified in the adaptive management activities, saltcedar, represents only 10% cover in the transplanted willow area which meets the performance standard.

8. Conclusions and adaptive management activities proposed (addressing unresolved issues, failure to meet performance standards):

Transplantation of mature coyote willows with their established root balls provides high survivorship at the sites. In addition, the habitat is well on its way to establishment using these mature trees. The aggressive water schedule (weekly once planted) provided the new plantings (cottonwood and Goodding's willow poles and long stem shrubs) the ability to establish at both sites. In addition, poles that lost their tops have resprouted from the base with this continual watering schedule. The sediment basin at Thurman I appears to be providing additional moisture from the water retention to plants located at the top of the basin. Further maintenance of the invasive species around the plantings will ensure the species successfully establish and eventually shade out the invasive species. Performance standards are being met and survivorship is high for all species; therefore, the adaptive management plan is not necessary at this time.

Section D: Photo Log

1. Number: Thurman I_03_100920

2. Date: 9 October 2020

3. Compass direction taken:
Degrees: 110
Cardinal/intercardinal: East-southeast

4. Coordinates (decimal degrees):
Latitude: 32.683616
Longitude: -107.178028

5. Photographer name: Charles Britt

Description: Coyote willow transplants upstream of Thurman I site

1. Number: Thurman I_01_10092020	
2. Date: 9 October 2020	
3. Compass direction taken: Degrees: 35° Cardinal/intercardinal: Northeast	
4. Coordinates (decimal degrees): Latitude: 32.683155 Longitude: -107.177078	
5. Photographer name: Charles Britt	
Basin retaining water at Thurman I	

1. Number: Thurman I_04_04212020	
2. Date: 21 April 2020	
3. Compass direction taken: Degrees: 0° Cardinal/intercardinal: North	
4. Coordinates (decimal degrees): Latitude: 36.682897 Longitude: -107.176336	
5. Photographer name: Charles Britt	
Description: Plantings along the eastern side of the arroyo from the confluence	

1. Number: Thurman I_06_04212020	
2. Date: 21 April 2020	
3. Compass direction taken: Degrees: 175° Cardinal/intercardinal: South	
4. Coordinates (decimal degrees): Latitude: 32.683361 Longitude: -107.177126	
5. Photographer name: Charles Britt	
Description: New plantings near the dam and confluence at Thurman I	

1. Number: Thurman II_04_07212020	
2. Date: 21 July 2020	
3. Compass direction taken: Degrees: 350° Cardinal/intercardinal: North	
4. Coordinates (decimal degrees): Latitude: 32.683065 Longitude: -107.17602	
5. Photographer name: Charles Britt	
Description: Downstream plantings at Thurman II	

1. Number: Thurman II_04_04212020	
2. Date: 21 April 2020	
3. Compass direction taken: Degrees: 95° Cardinal/intercardinal: East	
4. Coordinates (decimal degrees): Latitude: 32.683065 Longitude: -107.17602	
5. Photographer name: Charles Britt	
Description: Thurman II confluences plantings	

1. Number: Thurman II_02_04212020	
2. Date: 21 April 2020	
3. Compass direction taken: Degrees: 120° Cardinal/intercardinal: East-southeast	
4. Coordinates (decimal degrees): Latitude: 32.684888 Longitude: -107.182676	
5. Photographer name: Charles Britt	
Description: View of mixed Goodding's willows, cottonwoods, and long stem shrubs planted at Thurman II	

1. Number: Thurman II_01_10092020	
2. Date: 9 October 2020	
3. Compass direction taken: Degrees: 80° Cardinal/intercardinal: East	
4. Coordinates (decimal degrees): Latitude: 32.685662 Longitude: -107.183815	
5. Photographer name: Charles Britt	
Description: Thurman II upper basin	

1. Number: Thurman II_03_10092020	
2. Date: 9 October 2020	
3. Compass direction taken: Degrees: 155° Cardinal/intercardinal: South-southeast	
4. Coordinates (decimal degrees): Latitude: 32.685492 Longitude: -107.183747	
5. Photographer name: Charles Britt	
Description: Upstream coyote willow plantings at Thurman II	

1. Number: Thurman II_08_10092020	
2. Date: 9 October 2020	
3. Compass direction taken: Degrees: 285° Cardinal/intercardinal: West-northwest	
4. Coordinates (decimal degrees): Latitude: 32.68489 Longitude: -107.182047	
5. Photographer name: Charles Britt	
Description: Downstream coyote willow plantings at Thurman II	