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Riparian Reserves and Property Acquisition Activities

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August 21, 2014





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Outline

- Virgin River 1 - Implementation of Planting Plan
- Property Acquisition Activities
- Muddy River Management Activities
- Future Steps for the Riparian Reserves



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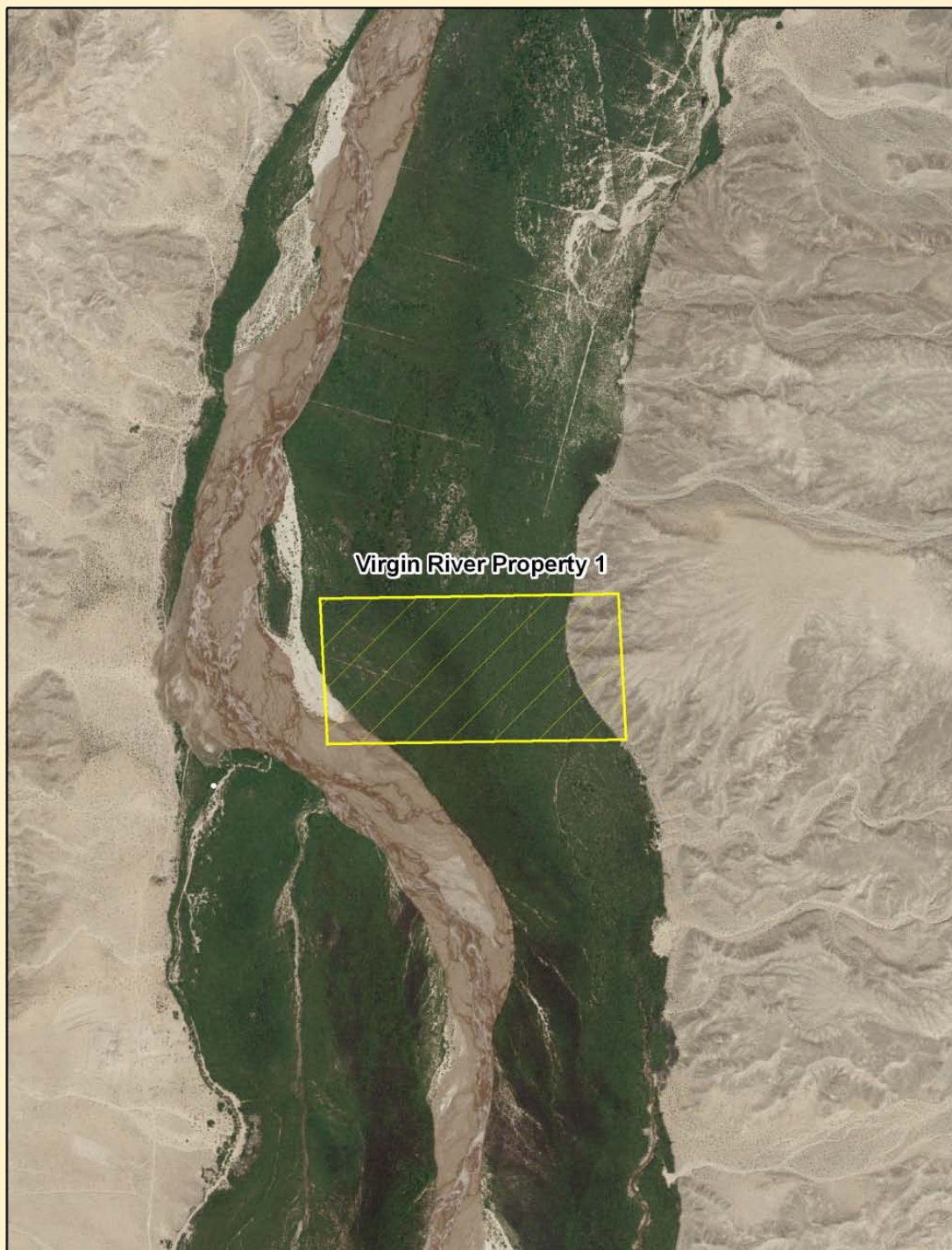
RIPARIAN RESERVE VIRGIN RIVER 1 IMPLEMENTATION OF PLANTING PLAN



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Virgin River 1 Management Goal

- Expand existing habitat for southwestern willow flycatcher and other MSHCP covered birds



Virgin River 1

- Lower Mormon Mesa
- 80 acres
 - Tamarisk Gooding willow mix
 - Riparian saltmarsh
- Existing SWFL observations
- Historical Yuma clapper rail



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2013-2014

Restoration Project

▪ Activities

- ✓ Ecohydrological Assessment
- ✓ Site Restoration Plan
- ✓ Tamarisk Removal
- Initiated Implementation of Planting Plan
 - Plant restoration
 - Fence installation
 - Weed control
 - Monitoring

▪ Partners

- Stillwater Sciences
- UC Santa Barbara
- Great Basin Institute
- Nevada Division of Forestry
- Partners in Conservation



Native Species

Gooding's willow	Baccharis
Coyote willow	Saltgrass
Mesquite (2)	Rush, Sedge
Wolfberry	Salt heliotrope
Arrowweed	Yerba mansa
Marsh fleabane	Quailbush

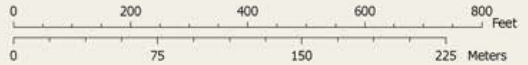
Invasive Weeds

Tamarisk	Russian knapweed
Camelthorn	Bermuda grass
Tall whitetop	



MAP 6 . MORMON MESA, VIRGIN RIVER: PROPOSED REVEGETATION SITES

- Data sources:
 Vegetation Management Units: Stillwater Sciences, 2013
 Sites: Stillwater Sciences, UCSB, Great Basin Institute, 2013
 Site Paths and Launch Point: UCSB, 2013
 Color Imagery: Utah State University, 2011 LIDAR
 LIDAR Hillshade: Utah State University, 2011
 Hillshade Tint (Inset) Natural Earth, 2010
- Launch Point
 - Site Paths
 - Wet Side Channels Observed
 - Proposed Revegetation Sites -Cleared
 - Access Path
 - Vegetation Management Units
 - Proposed Revegetation Sites
 - CountyParcel_Boundary





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2013-14 Restoration

Site Locations	Tamarisk Cleared	Total Planting Area
AB	.02	.02
B	.03	.03
D	.25	.25
E	.05	.05
F	.08	.08
GHI	n/a	7.00
	.43	Total 7.43



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Plant Palette

Plant	Nursery Stock		Local Source
Goodings willow	1 Gal	Pole	Pole/Cutting
Ash	1 Gal		
Cottonwood	1 Gal		Pole/Cutting
Coyote willow	1 Gal	Pole	Pole/Cutting
Baccharis	1 Gal		
Arrowweed	1 Gal		
Yerba mansa	1 Gal		
Juncus	1 Gal		
Eleocharis	1 Gal		



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Site AB

Before tamarisk removal



After tamarisk removal





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Site AB

Willow
Yerba mansa
Juncus

7/16/2014 After Planting





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Site B

7/16/2014 After Planting

Willow
Cottonwood
Arrowweed
Yerba mansa
Juncus
Alkali helitrope





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Site D

Before tamarisk removal



After tamarisk removal





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Site D

7/16/2014 After Planting

Willow
Cottonwood
Yerba mansa
Tall whitetop





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Site E

7/16/2014 After Planting

Willow
Cottonwood
Arrowweed
Juncus
Eleocharis





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Site GHI



Bruce Orr, Stillwater Sciences



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Site GHI

Willow
Cottonwood
Ash
Bachcharis





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Fence line GHI





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ACQUISITION ACTIVITIES



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Permit Requirement Condition K

- Acquire lands on the Virgin and Muddy Rivers, and Meadow Valley Wash to preserve as habitat for riparian birds covered by the MSHCP

Covered Riparian Birds

Southwestern willow flycatcher
Yellow-billed cuckoo
Arizona Bell's vireo
Blue grosbeak
Summer tanager
Vermillion flycatcher

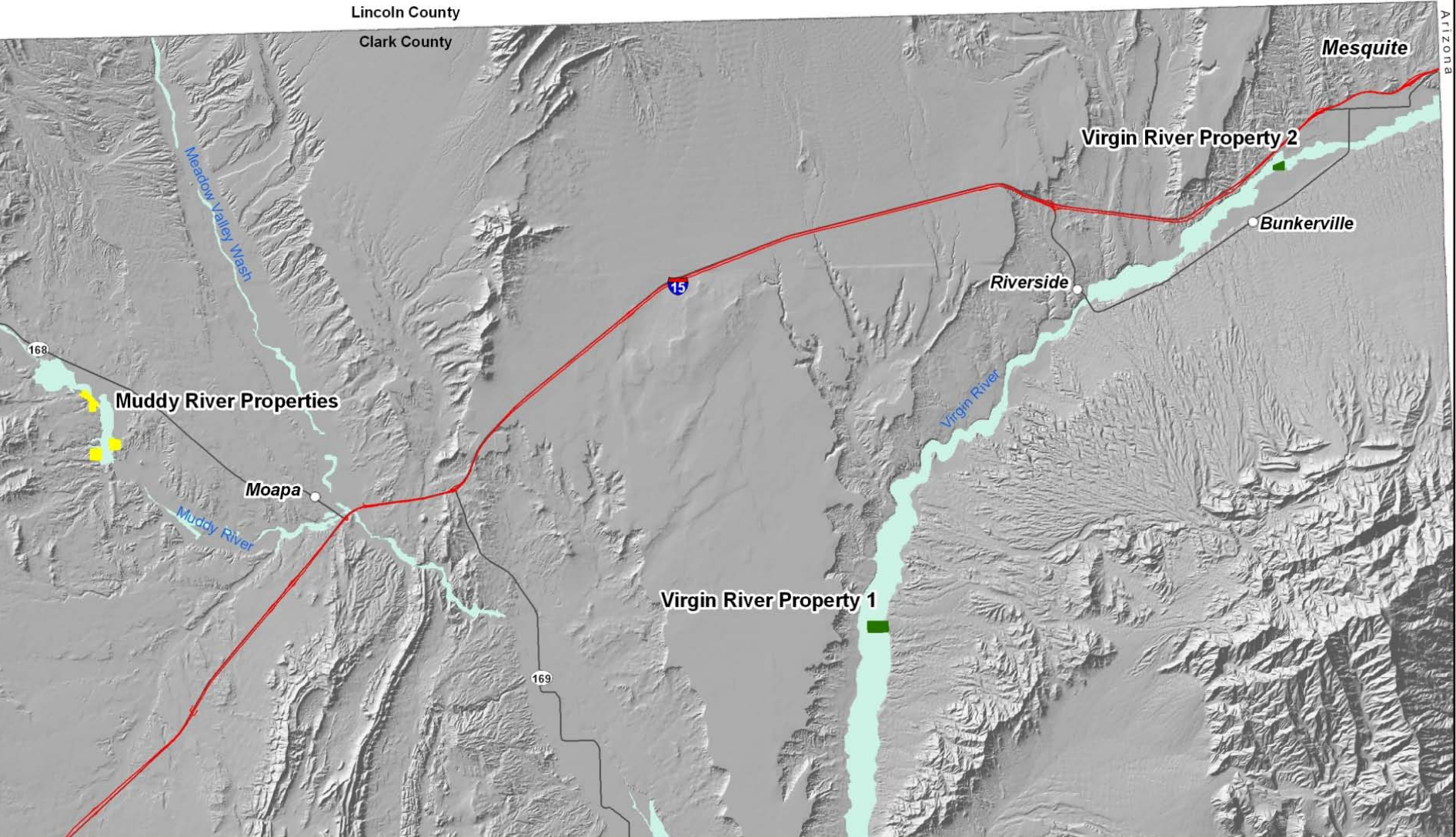


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Lincoln County
Clark County

ARIZONA



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Desert Conservation Program Riparian Reserve Properties

Projection: Transverse Mercator
Coordinate System: UTM Zone 11
Datum: NAD83
Date: 7/27/2011

This information is for display only.
No liability is assumed as to the
accuracy of the data presented
hereon. (Draft - 7/27/11)
Clark_County_riparian_reserve.mxd





2.6 Acres

17.4 Acres

County Property

37 Acres

10 Acres

8 Acres

Riverside

looking west, downstream



Looking east across property





Potential Priority Properties Under Consideration

Location	Estimated Acreage	Number of Parcels	Status
Virgin and Muddy Rivers	219	11	Existing
Virgin River Expansion	75	5	Transfer Oct 2014
Virgin River – Bunkerville and Mesquite	216	8	Potential
Total	510	24	



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MUDDY RIVER ACTIVITIES



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Continued Property Management

Continued Property Maintenance

- Weekly site visits and reports

Conducted minor fire management activities

- New fire break
- Removed dead trees



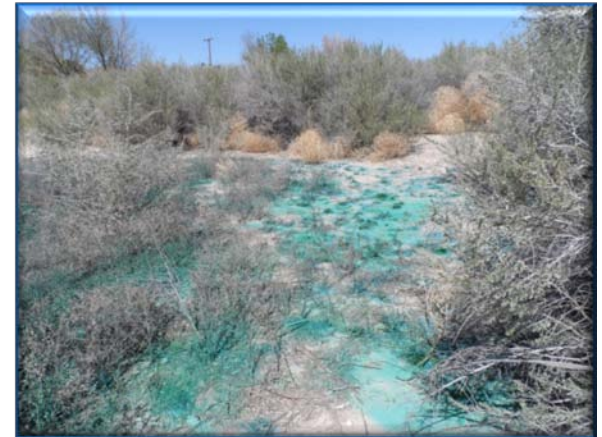


Continued Weed Management (NPS)

- Survey and map location and extent of weeds
- Treat annual and perennial weeds

Noxious Weeds

- Malta star thistle –high potential to expand
- Puncture vine
- Australian saltbush
- African mustard
- Russian knapweed





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Continued Property Management

- Installed pipe in irrigation canal
 - NDOW





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NEXT STEPS RIPARIAN RESERVES



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Future Steps - Riparian Reserves

- Finalize the Riparian Management Plan
- Initiate baseline bird surveys on Riparian Reserves
- Continue riparian property acquisition



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Future Steps - Virgin River Reserve

- Continue Riparian Reserve Virgin River 1 restoration project
 - Monitoring
 - Additional plantings
 - Fence improvements
- Initiate weed management on all Virgin River properties



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Future Steps - Muddy River

- Continue weed management and property maintenance projects
- Tamarisk control and restoration project
- Muddy River Restoration (SNPLMA 14)
 - 5 acres of riparian and upland habitat
 - 5 year project
 - \$88,650



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Questions?