

Muddy River DCP Properties Weed Management (2015-NPS-1520B)

MSHCP Annual Project Progress Report Symposium
August 23, 2016

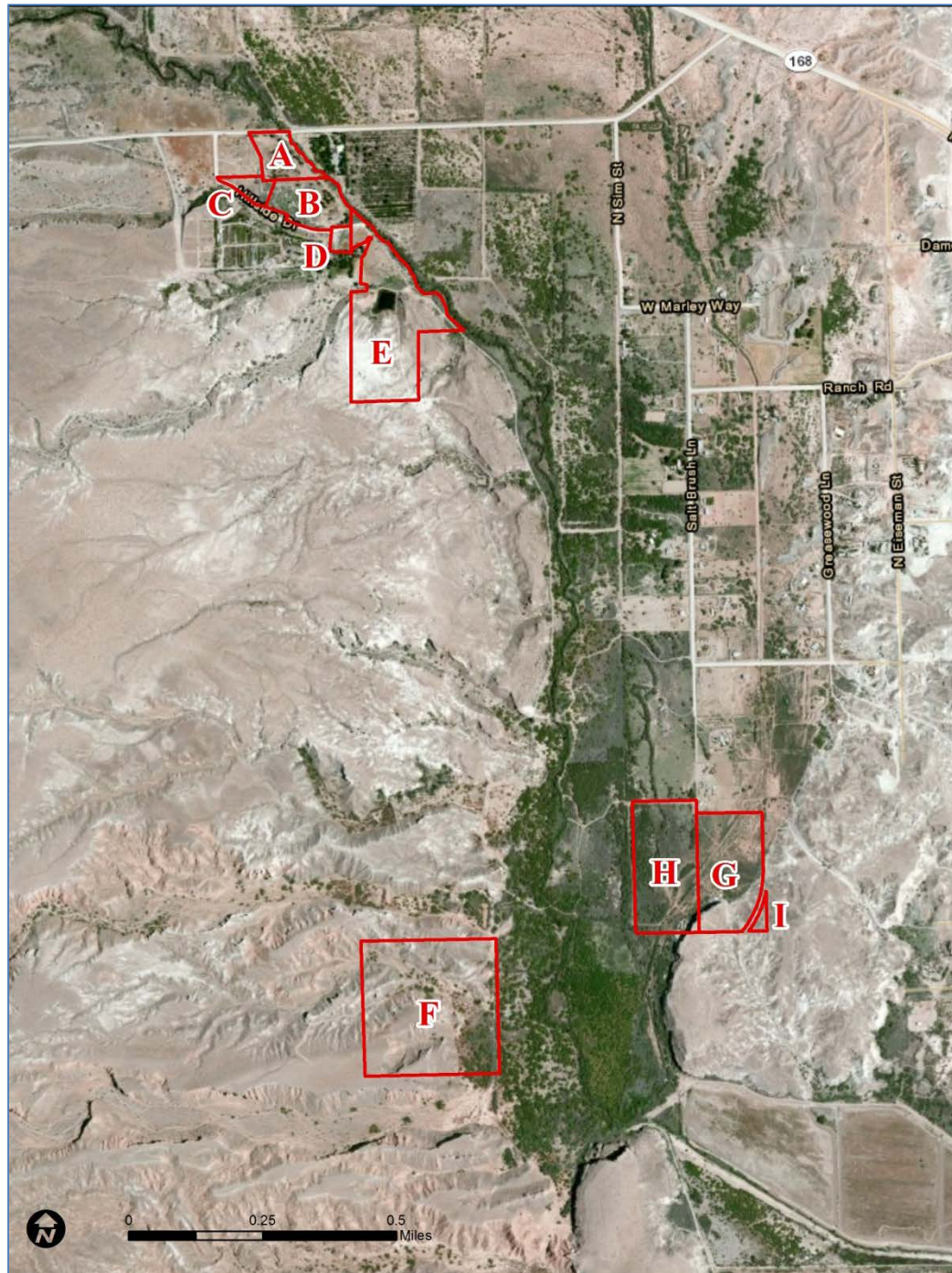
**Presenter: Curt Deuser, National Park Service Lake
Mead Exotic Plant Management Team**

Project Overview

- Three year project Interlocal Agreement approved in October 2015
- Conduct inventories of non-native vegetation and weed treatments
- Goal and Objective: Support vegetation mgt and maintenance activities along the Muddy River for enhancement of native riparian species of concern within the MSHCP

Primary Project Activities

- Conducted winter weed surveys and weed treatments
- Conducted spring/summer weed surveys and treatments
- Mapping plant populations with GPS and processing into GIS (NAISMA Standards)
- Conducted revegetation and native seeding
- Watering transplants
- Data processing/management



Clark County Muddy River Reserve Properties

Unit E



View of Unit H/G



Looking West from Unit G into H



Unit F looking East



Species	Total Surveyed Acres	Infested Acres	Gross Infested Acres Treated	Treated Acres
<i>Atriplex semibaccata</i> Australian Saltbush	117.25	0.08	9.69	0.08
<i>Bassia hyssopifolia</i> Five-hook bassia	117.25	0.005	0.98	0.005
<i>Bromus rubens</i> Red brome	117.25	0.18	6.14	0.18
<i>Centaurea melitensis</i> Malta starthistle	117.25	0.18	21.23	0.18
<i>Chorispora tenella</i> Blue mustard	117.25	0.14	11.98	0.14
<i>Convolvulus arvensis</i> Field bindweed	117.25	0.26	20.36	0.26
<i>Erodium cicutarium</i> Redstem filaree	117.25	0.12	14.06	0.12
<i>Malcomia africana</i> African mustard	117.25	0.53	30.22	0.53
<i>Malva neglecta</i> Common mallow	117.25	0.28	20.79	0.28
<i>Salsola kali</i> Russian thistle	117.25	0.32	16.45	0.32
<i>Sisymbrium altissimum</i> Tall tumblemustard	117.25	0.03	2.21	0.03
<i>Sisymbrium irio</i> London rocket	117.25	1.51	30.96	1.51
<i>Sorghum halepense</i> Johnsongrass	117.25	0.02	0.03	0.02
<i>Tamarix ramosissima</i> * Salt cedar	117.25	0.01	0.02	0.01
<i>Tribulus terrestris</i> Puncturevine	117.25	0.13	10.12	0.13

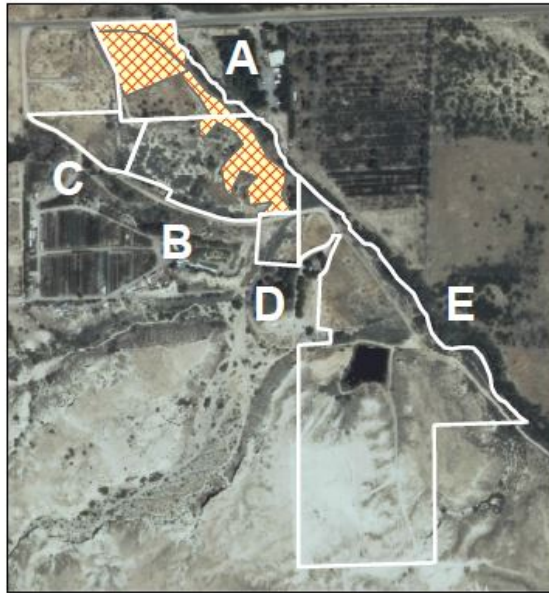
*Infested acres does not include large, dense stands of Tamarisk in properties G and H, which were mapped in previous years and have not been treated.

Australian saltbush (*Atriplex semibaccata*)





Lake Mead EPMT Inventory and Treatments



Clark County Muddy River Reserve FY 2016

Atriplex semibaccata
Australian saltbush

Gross Infested: 9.69 acres



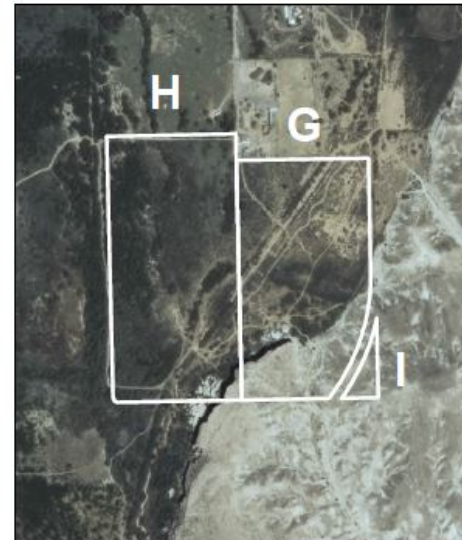
Infested: 0.08 acres



Treated: 0.08 acres

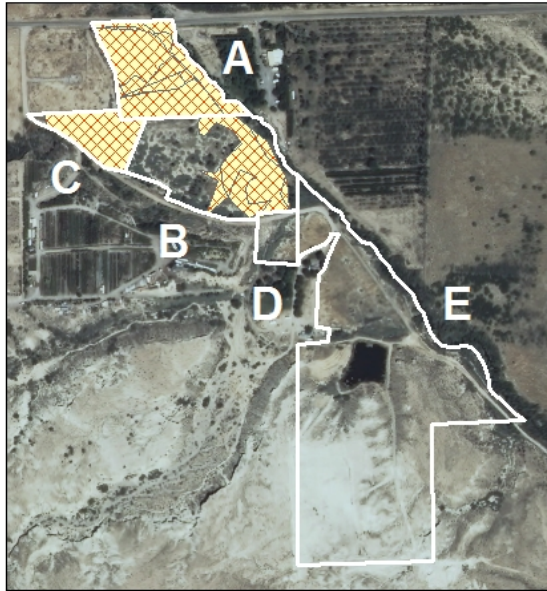


0 0.1 0.2 Miles
1:7500 NAD83 UTM Zone 11N





Lake Mead EPMT Inventory and Treatments




Clark County Muddy River Reserve FY 2016

Centaurea melitensis
Malta starthistle

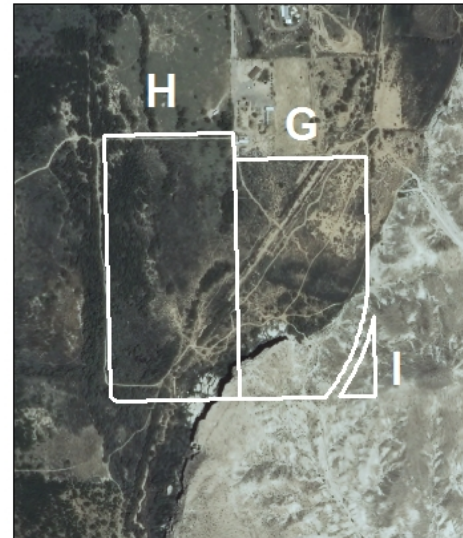
Gross Infested: 21.22 acres

 **Infested:** 0.18 acres

 **Treated:** 0.18 acres



0 0.1 0.2 Miles
1:7500 NAD83 UTM Zone 11N



Malta Starthistle (CEME)

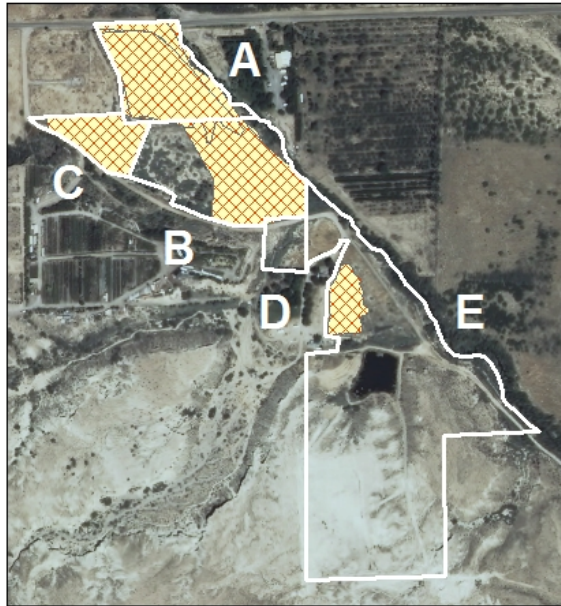




Lake Mead EPMT Inventory and Treatments

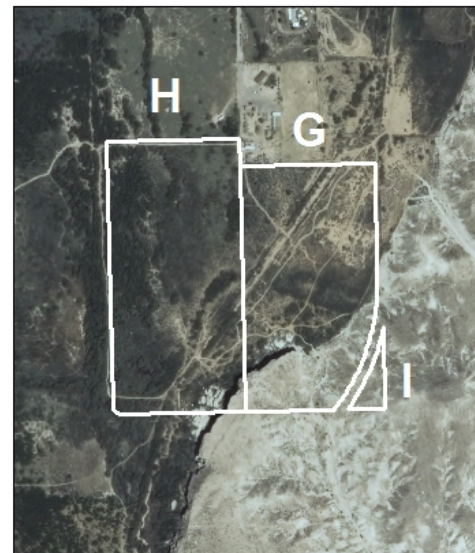
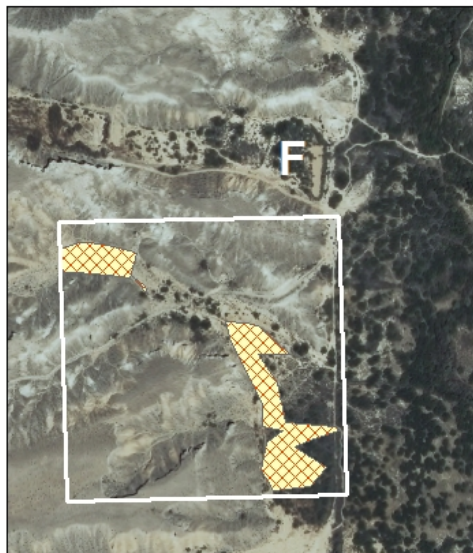
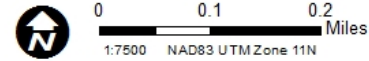


Clark County Muddy River Reserve FY 2016



Malcolmia africana
African mustard

- Gross Infested:** 30.22 acres
- Infested:** 0.53 acres
- Treated:** 0.53 acres

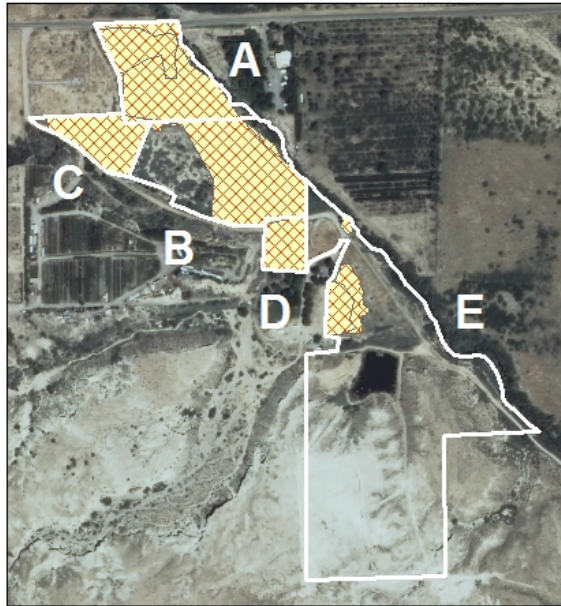


African Mustard (*Malcomia africana*)





Lake Mead EPMT Inventory and Treatments




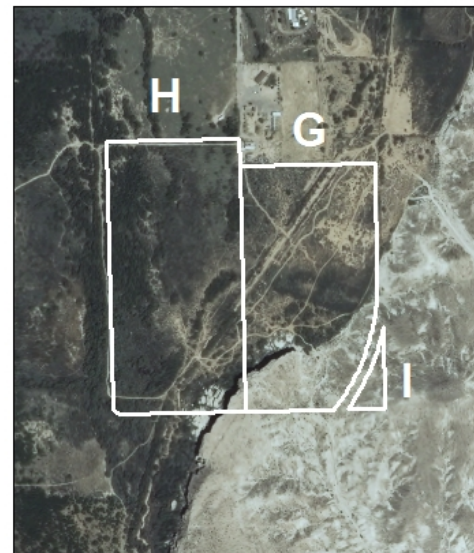
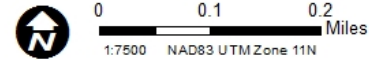
Clark County Muddy River Reserve FY 2016

Sisymbrium irio
London rocket

Gross Infested: 30.96 acres

 **Infested:** 1.51 acres

 **Treated:** 1.51 acres

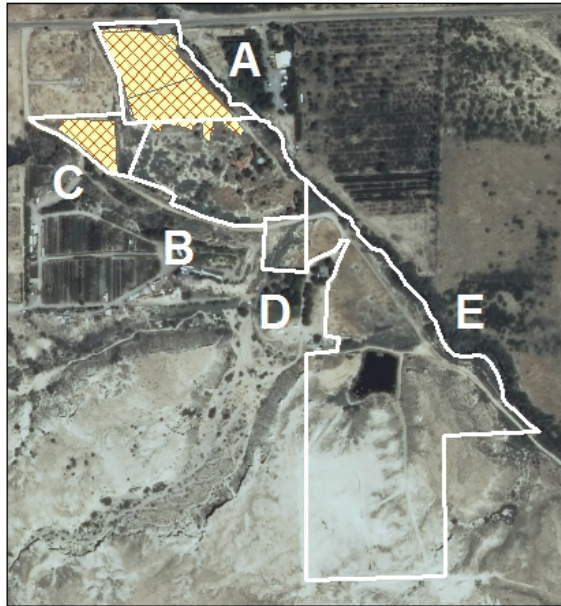


London Rocket (SIIR)





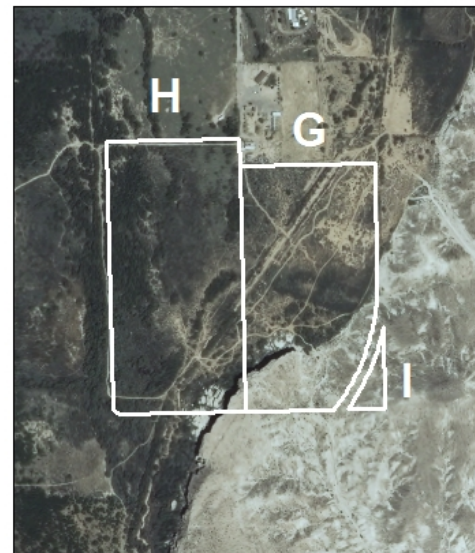
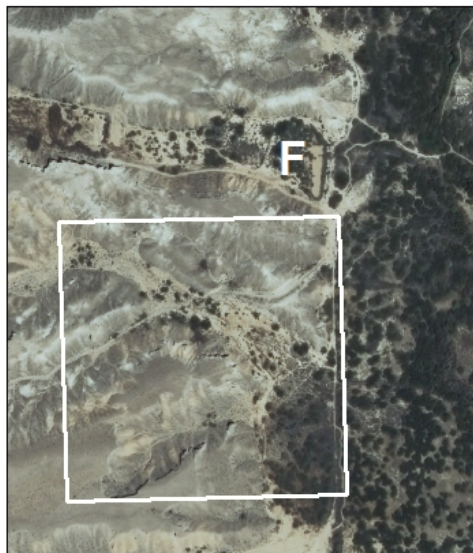
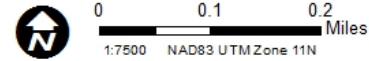
Lake Mead EPMT Inventory and Treatments



Clark County Muddy River Reserve FY 2016

Tribulus terrestris
Puncturevine

- Gross Infested:** 10.12 acres
- Infested:** 0.13 acres
- Treated:** 0.13 acres



2016 Preliminary Herbicide Use

Herbicide Concentrate: 0.96 gal Roundup Pro Concentrate
0.47 gal Weedar 64
0.31 gal Weedmaster
0.1 gal Garlon 4 Ultra

Herbicide Mixture Rate: Mix #1: 1% Roundup Pro Concentrate, 1% Weedar 64
Mix #2: 2% Roundup Pro Concentrate, 1% Weedar 64
Mix #3: 1% Roundup Pro Concentrate, 1oz/gal Weedmaster
Mix #4: 1 oz/gal Roundup Pro Concentrate, 1% Weedar 64
Mix #5: 20% Garlon 4 Ultra
Mix #6: 2% Roundup Pro
Mix #7: 1% Weedmaster, 1% Roundup Pro

Herbicide Total Mix: Mix #1: 37.25 gal
Mix #2: 6 gal
Mix #3: 34 gal
Mix #4: 3.5 gal
Mix #5: 0.25 gal
Mix #6: 3 gal
Mix #7: 4.5 gal

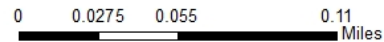
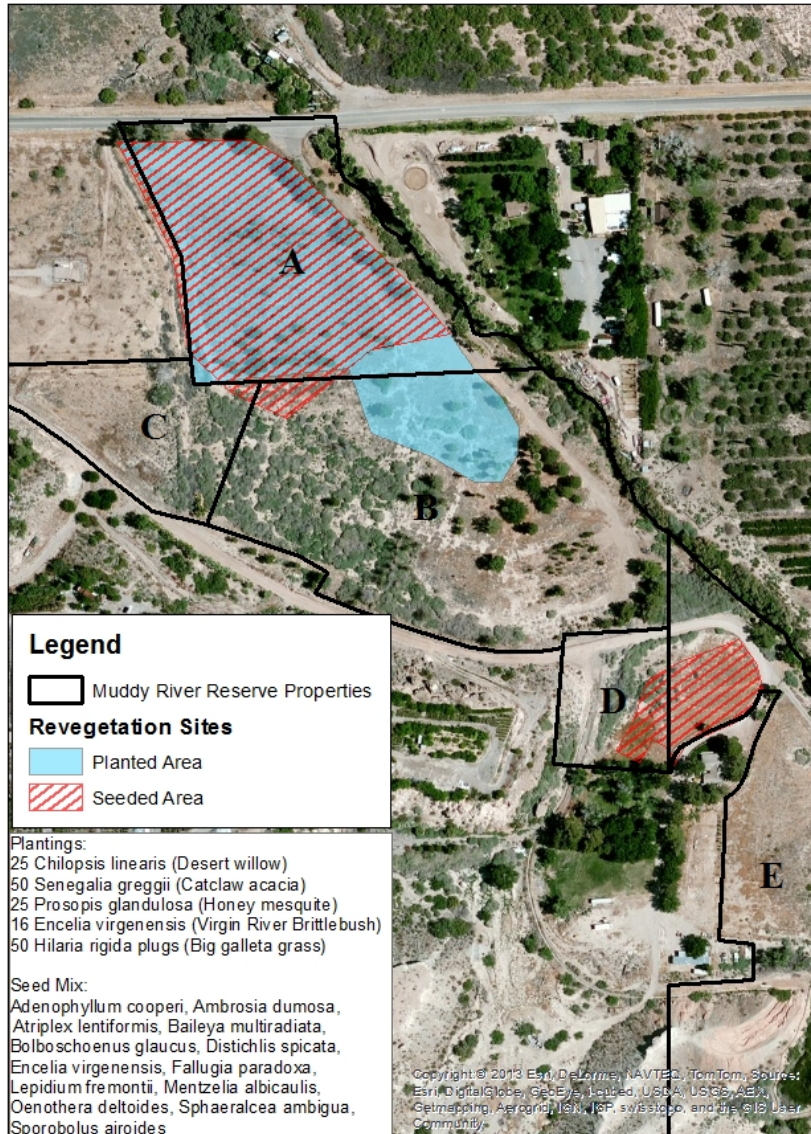
Muddy River Revegetation

- Desert willow trees (CHLI) 25- 1 gallon
- Honey mesquite trees(PRGL) 25 -1 gallon
- Catclaw trees (SEGR) 50 -1 gallon
- Virgin brittlebush (ENVI) 16- 1gallon
- Big galleta grass (PLRI) 50- 1 gallon

Planted on 3/28/16



Muddy River Reserve Revegetation Sites



Revegetation Process



Handheld Power Augers



Location...Location



Tree Shelters



Transplant



Transplant Watering



Desert Willow and Galleta Grass



Honey Mesquite Trees



Brittlebush



Muddy River Seeding Units A/D

4/12/16

- Sactone grass (SPAI) 35 pounds

SEED ORDER Form for Bend Seed Extractory

Seed Order

#:

(For BSE use only)

Please submit completed forms to:

Kayla Herriman at kherriman@fs.fed.us or Sarah Garvin at sarahegarvin@fs.fed.us

Date Ordered:

2/24/2015

Date Needed to

Receiver: ASAP

ID Short Code	Source Code	Pounds to Ship	Receiver	Comments
SOS-NV040-208	ADCO2-SOS-NV040-208-LINCOLN-14	0.074#	Please send all seed to : Curt Deuser Lake Mead National Recreation Area 601 NV Way Boulder City, NV 89005 702-293-8979 curt_deuser@nps.gov	Please send the entire remainder of
SOS-NV040-193	AMDU2-SOS-NV040-193-LINCOLN-14	0.327#		
SOS-NV040-65	AMDU2-SOS-NV040-65-10	0.791#		seed for each
SOS-NV052-381	BAMU-SOS-NV052-381-LINCOLN-12	0.025#		accession
SOS-NV040-202	BAMU-SOS-NV040-202-LINCOLN-14	0.0144#		
SOS-NV040-192	ENVI-SOS-NV040-192-LINCOLN-14	0.18#		
SOS-NV040-198	ENVI-SOS-NV040-198-LINCOLN-14	0.044#		
SOS-NV040-108	FAPA-SOS-NV040-108-10	0.082#		
SOS-NV052A-003	FAPA-SOS-NV052A-003-CLARK-12	0.048#		
SOS-NV040-197	LEFR2-SOS-NV040-197-LINCOLN-14	0.099#		
SOS-NV052-550	LYAN-SOS-NV052-550-CLARK-15	0.1391#		
SOS-NV052-543	LYAN-SOS-NV052-543-NYE-15	0.1335#		
SOS-NV040-196	MEAL6-SOS-NV040-196-LINCOLN-14	0.0653#		
SOS-NV052-324	OEDEA-SOS-NV052-324-CLARK-12	0.002#		
SOS-NV052-356	OEDE2-SOS-NV052-356-CLARK-12	0.01#		
SOS-NV040-201	SPAM2-SOS-NV040-201-LINCOLN-14	0.047#		
SOS-NV040-64	SPAM2-SOS-NV040-64-10	0.086#		

Spreading the seed



Raking the seed "in"



April 2016 Rains = Puncture Vine and Russian Thistle



Chaste Tree in C

Vitex agnus-castus



Russian Knapweed (*Acroptilon Repens*) Controlled



Thank You

- *This work was supported by the Clark County Desert Conservation Program and funded by Section 10, as project #2015-NPS-1520B, to further implement or develop the Clark County Multiple Species Habitat Conservation Plan*
- *Tina Mozelewski, Clark County/MRR, NV*
- *Tim Federal, NPS EPMT Data Manager*
- *EPMT Staff (Ashley Kroon and many others)*
- *BLM NV (Ely and S NV Districts)*
- *USFS Bend OR Seed Extractory*
- *Eastern NV Landscape Coalition (seed collection)*
- *NPS Lake Mead NRA Native Plant Nursery*