

**Boulder City Conservation Easement
Weed Sentry Project Update
Project 2007-NPS-714K**

**Presented by: Curt Deuser, Ecologist,
National Park Service**

**August 21, 2014 MSHCP Annual Project
Progress Report Symposium**

Project Overview

- Inter-local Agreement between Clark County and NPS (approved January 2014)
- Conduct surveys of routes within the BCCE to detect non-native (exotic) vegetation/weeds
- Conduct targeted weed treatments
- Note native plants observed
- Up to 95 miles of roads, 10 meters on either side of road edge
- Winter and Summer surveys
- Control incipient weeds/early detection rapid response

Project Goal

Support vegetation management and maintenance activities in the BCCE to maintain and improve desert tortoise habitat.



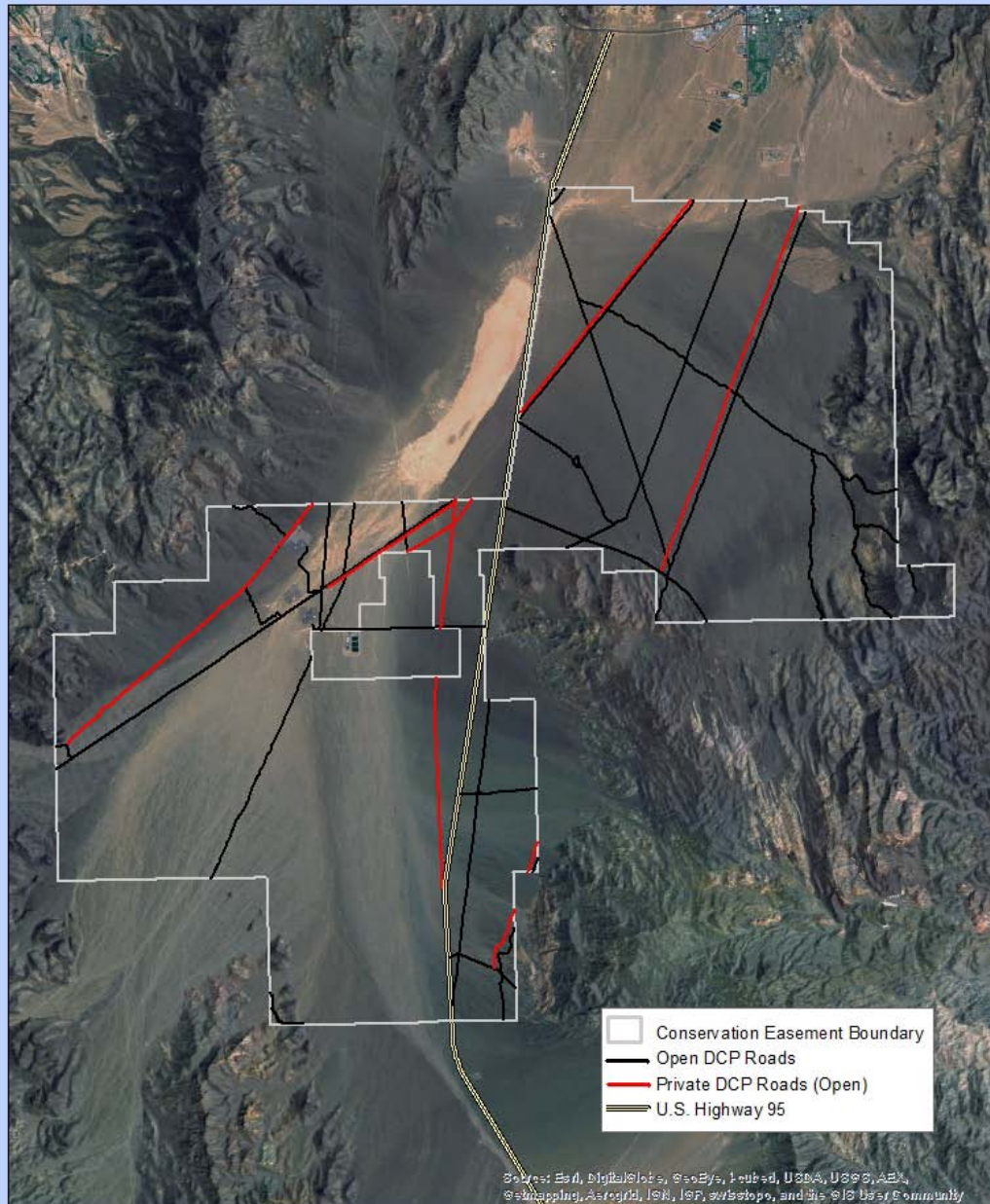
Tortoise photo courtesy of National Park Service



Summary of Accomplishments

- Annual Work Plan completed
- Data Management Plan completed
- Reviewed 2004 survey data
- Developed Procedures and Measures for minimizing dust exposure to field crews
- Completed initial winter weed survey and treatments
- Summer survey in progress
- Created initial draft species list
- Data processing in progress
- Planning future treatments

Boulder City Conservation Easement





Lake Mead Exotic Plant Management Team Treatments

Partner: Clark County Desert Conservation Program

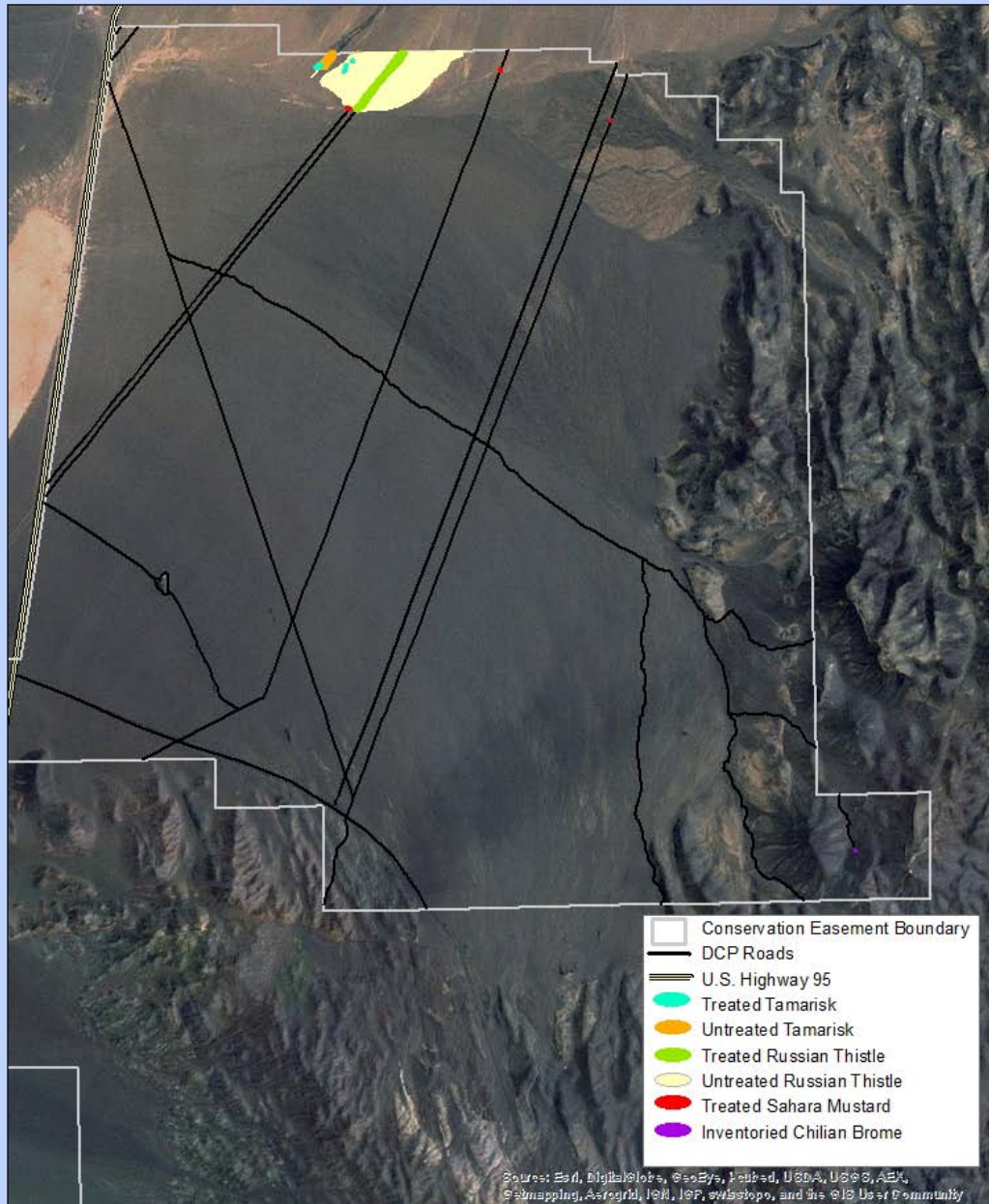
Location: Boulder City Conservation Easement

Miles of road surveyed: approx. 92

Accomplishments				
Species	Total Inventoried Acres	Infested Acres	Gross Infested Acres	Treated Acres
<i>Salsola kali</i> Russian thistle	1903	17.63	351.84	1.31
<i>Arundo donax</i> Giant reed	1903	0 (dead stand)	0.02	0
<i>Bromus trinii</i> Chilian brome	1903	0.001	0.001	0 (species not confirmed)
<i>Erodium cicutarium</i> Redstem filaree	1903	0.001	0.02	0.001
<i>Malva sp.</i> Big-leaf mallow	1903	0.001	0.001	0
<i>Tamarix ramosissima</i> Salt cedar	1903	0.2	9.14	0.03
<i>Brassica tournefortii</i> Sahara mustard	1903	0.002	2.11	0.002
<i>Brassica nigra</i> Black mustard	1903	0.005	0.05	0.005
<i>Sisymbrium irio</i> London rocket	1903	0.01	0.38	0.01

**Tribulus terrestris* (puncturevine) was found outside the BCCE boundary along the shoulder of U.S. 95 near the Eldorado dry lakebed, should be monitored in the future to ensure it does not spread into easement.

Boulder City Conservation Easement



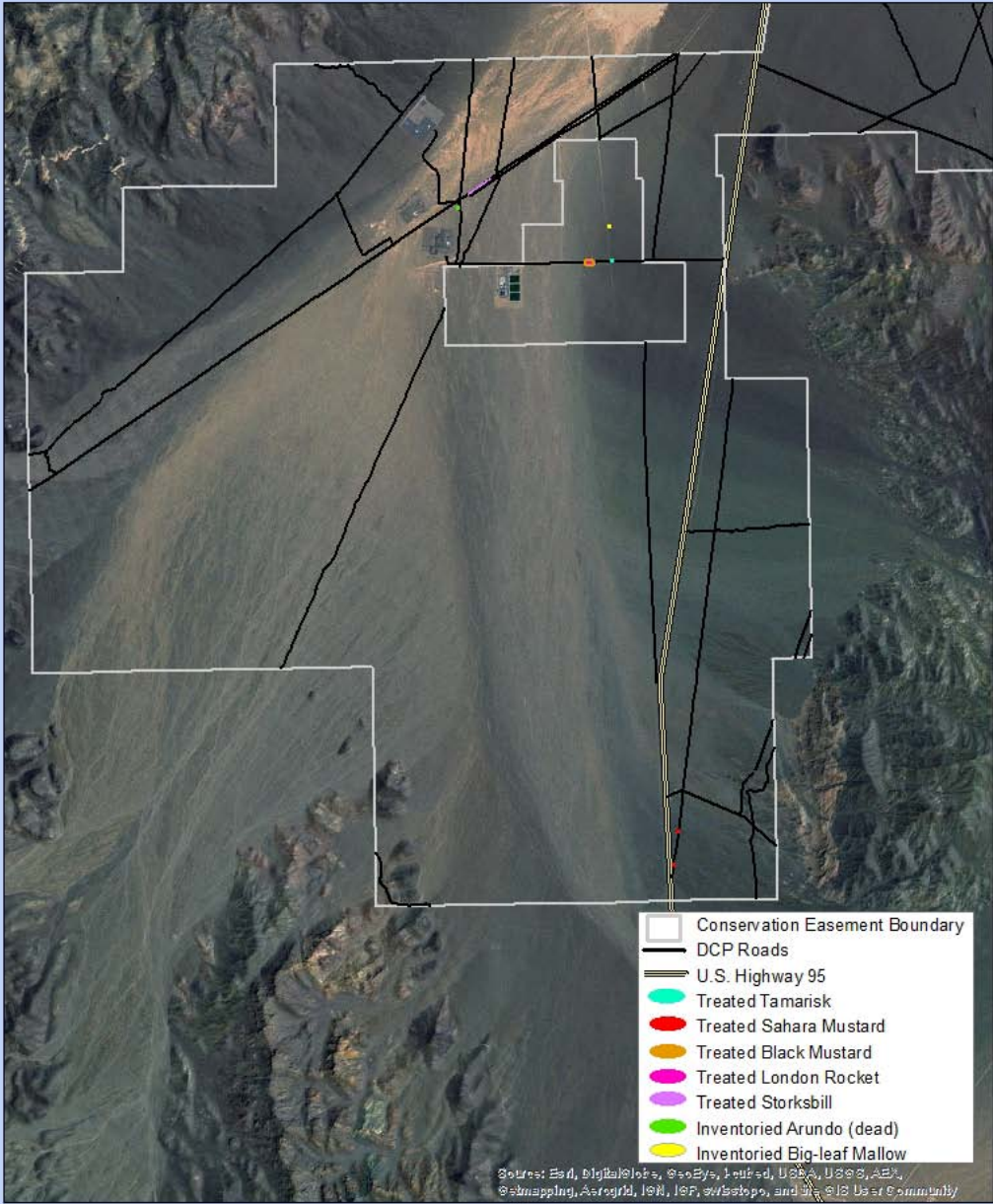
Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, Aero, Swisstopo, and the GIS User Community

Lake Mead Exotic Plant Management Team, Aug. 2014

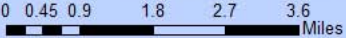


0 0.35 0.7 1.4 2.1 2.8 Miles

Boulder City Conservation Easement



Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, Aero, Swisstopo, IGN, IGP, Swisstopo, and the GIS User Community



GPS Mapping



Sahara Mustard

Brassica tournefortii



Giant Cane Grass

Arundo donax



Big Galleta “Grasslands”

Pleuraphis rigida



Tamarisk Leaf Beetle

Diorhabda carinulata



Larvae



Tamarisk Defoliation



Preliminary Draft Boulder City Conservation Easement Plant Species List*

Acacia greggii	Catclaw acacia	N			
Ambrosia dumosa	Burrobush	N	Opuntia basillares	Beavertail cactus	N
Amsinckia tessellate	Bristly fiddleneck	N	Optunia versicolor	Staghorn cholla	N
Argythamnia neomexicana	New mexico silverbush	N	Phacelia crenulata	Notch-leaf phacelia	N
Arundo donax	Giant reed	E	Plantago ovate	Desert plantain	N
Atriplex polycarpa	Cattle saltbush (possible)	N	Pleuraphis rigida	Big galleta grass	N
Boerhavia sp.	Spiderling	N	Prosopis glandulosa.	Honey mesquite	N
Brassica juncea	Indian mustard	E	Salsola kali	Russian thistle	E
Brassica nigra	Black mustard	E	Salvia columbariae	Mojave desert chia	N
Brassica tournefortii	Sahara mustard	E	Sisymbrium iro	London rocket	E
Bromus trinii	Chillian brome	E	Sphaeralcea ambigua	Desert mallow	N
Camissonia brevipes	Golden suncup	N			
Chondrilla juncea	Rush skeleton weed (possible)	E			
Cryptantha sp.	Forget-me-not sp.	N			
Cylindropuntia bigelovii	Teddy-bear cholla	N			
Dalea mollis	Silk dalea	N			
Dasyochloa pulchella	Desert fluff-grass	N			
Echinocactus sp.	Barrel cactus	N			
Encelia farinosa	Brittlebush	N			
Ephedra californica	Mormon tea	N			
Eriogonum fasciculatum	Eastern Mojave buckwheat	N			
Erodium cicutarium	Redstem filaree, Stork's bill	E			
Eschscholzia glyptosperma	Mojave poppy	N			
Larrea tridentata	Creosotebush	N			
Malva sp.	Big-leaf mallow	E			
Mentzelia affinis	Yellow comet	N			
Nicotiana attenuata	Coyote tobacco	N			

*List reflects non-vouchered observations recorded spring/summer 2014 and is not comprehensive or peer verified, produced by Daniel Townsend, NPS.

Acknowledgements

- *This work was supported by the Clark County Desert Conservation Program and funded by Section 10, as project #2007-NPS-714K, to further implement or develop the Clark County Multiple Species Habitat Conservation Plan*
- John Brekke, Clark County Desert Conservation Program
- Tim Federal, NPS Project Leader and Data Manager
- Daniel Townsend, NPS Biological Technician

Muddy River Reserve Weed Management (2011-NPS-915A)

2014 MSHCP Annual Project Progress Report
Symposium

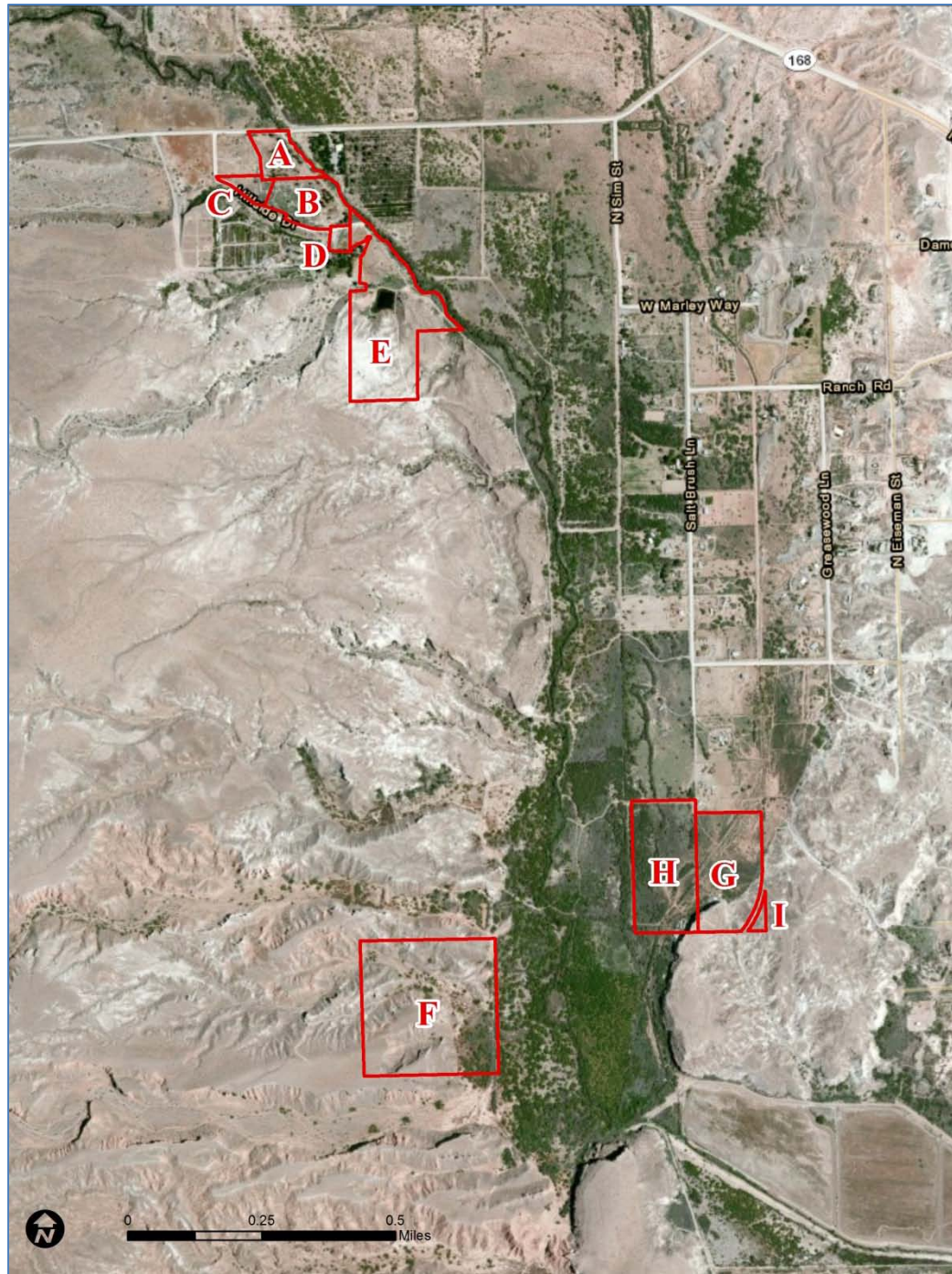
Presenter: Curt Deuser, National Park Service
Lake Mead Exotic Plant Management Team

Project Overview

- Three year project interlocal agreement approved in late February 2013
- Conduct inventories of non-native vegetation and implement 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

Project Activities

- Conducted winter weed surveys and weed treatments in 2013 and 2014
- Conducted spring/summer weed surveys and treatments in 2013 and on going in 2014
- Mapping plant populations with GPS and processing into GIS (NAWMA Standards)
- Entering Data
- Labeling Photos



Clark County Muddy River Reserve Properties

Muddy River Reserve Weed Species List

Species	Total Inventoried Acres	Infested Acres	Gross Infested Acres	Treated Acres
<i>Acroptilon repens</i> Russian knapweed	117	0.005	20.9	0.005
<i>Atriplex semibaccata</i> Australian saltbush	117	0.16	12.9	0.15
<i>Bassia hyssopifolia</i> fivehook bassia	117	0.001	3.2	0.001
<i>Bromus rubens</i> red brome	117	2.0	38.1	N/A
<i>Bromus tectorum</i> cheat grass	117	0.36	11.2	N/A
<i>Centaurea melitensis</i> Malta starthistle	117	0.02	22.9	0.02
<i>Chorispora tenella</i> blue mustard	117	0.0002	0.1	N/A
<i>Convolvulus arvensis</i> field bindweed	117	0.05	9.7	0.05
<i>Cynodon dactylon</i> Bermudagrass	117	0.27	21.0	N/A
<i>Erodium cicutarium</i> redstem stork's bill	117	0.21	17.0	0.21
<i>Lactuca serriola</i> prickly lettuce	117	0.004	9.3	0.004
<i>Malcolmia africana</i> African mustard	117	1.76	73.6	0.52
<i>Salsola kali</i> Russian thistle	117	0.14	10.8	0.14
<i>Sisymbrium irio</i> London rocket	117	1.65	18.3	1.65
<i>Tamarix ramosissima</i> saltcedar	117	7.1	43.1	0.01
TOTAL SPECIES ACRES	117	13.7	312.1	2.8

Australian saltbush (*Atriplex semibaccata*)



Clark County Muddy River Reserve March 2013

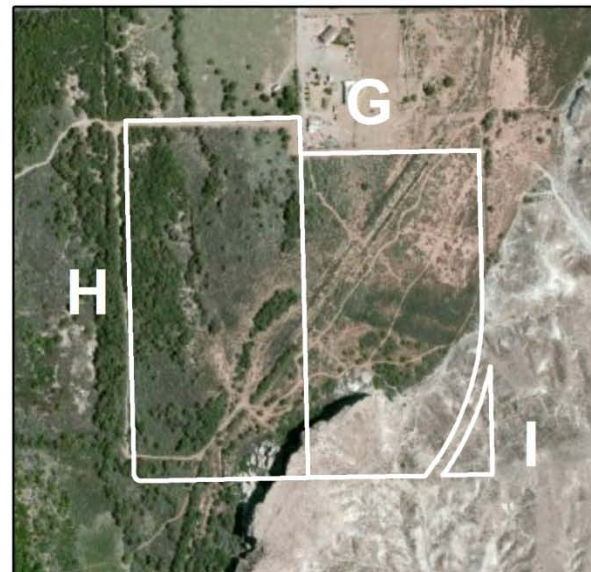
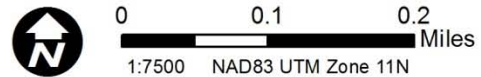


Atriplex semibaccata
Australian saltbush

Gross Infested: 12.9 acres

 **Infested:** 0.16 acres

 **Treated:** 0.15 acres



Australian saltbush controlled by >90% from original population



Before treatment



After treatment

Clark County Muddy River Reserve March 2013



Acroptilon repens

Russian knapweed

Gross Infested: 20.9 acres



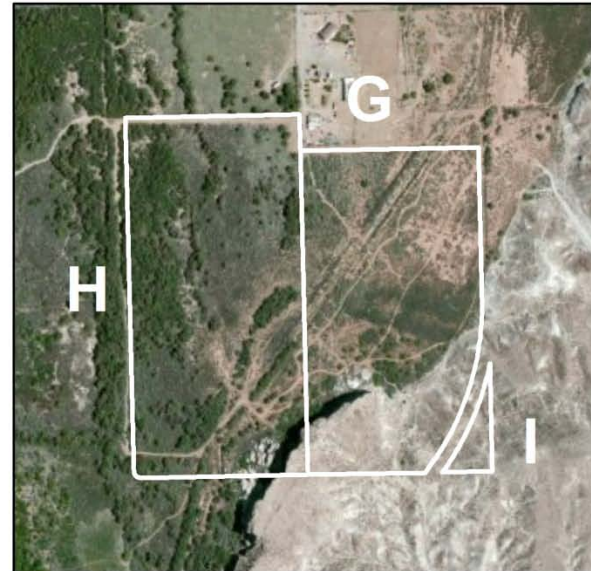
Infested: 0.005 acres



Treated: 0.005 acres



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



Russian Knapweed controlled



Reduction of other weed species

- Johnson grass
- Russian thistle
- Field bindweed

Challenging species include African mustard (uplands) and Malta starthistle (adjacent properties)

Overall much less weeds on site after the 1.5 years of project.



Native Plant Recovery

- Recent 2014, observed many native species naturally recolonizing the areas
- Many creosote and mesquite seedlings establishing in Unit A



Future

- Continue project activities through 2015
- BLM initiating control (with NPS EPMT) of russian knapweed and tamarisk (including restoration) in the old Perkins ranch adjacent to County properties
- Possible future tamarisk control and revegetation in County Muddy River Unit H

Acknowledgements

- *This work was supported by the Clark County Desert Conservation Program and funded by Section 10, as project #2011-NPS-915A, to further implement or develop the Clark County Multiple Species Habitat Conservation Plan*
- Liz Bickmore, Clark County DCP
- NPS EPMT Staff: Daniel Townsend, Joe Castello, Dwayne Coleman, Tim Federal