Vegetation Management on Clark County MSHCP Properties





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Lake Mead Inter-Regional Invasive Plant Management Team

MSHCP Annual Project Progress Report Symposium

August 31, 2026

Riparian Reserves Vegetation Management

2026 MSHCP Annual Project Progress Symposium (2021-NPS-2010E)



Project Information

- Awarded in November of 2025 through July 2026
- Purpose: Conduct inventory and weed treatments of non-native invasive vegetation
- Prioritization: Early detection rapid response
- Prioritize treatments of well-established, more widespread species

Project Objectives

- Improve habitat along the Virgin and Muddy Rivers for species covered by the MSHCP
- Increase diversity and extent of desirable native species
- Reduce fire risk associated with non-native and invasive weeds

Priority Weeds of Concern

<u>Present</u>

- Tall Whitetop(*Lepidium latifolium*)
- Camelthorn (*Alhagimaurorum*)
- *Tamarix* species *(Tamarixaphylla/ramosissima)*
- Malta Starthistle(*Centaura melitensis*)
- Palm Trees (date and fan palm)
- Giant Cane Grass (*Arundo donax*)
- Russian Knapweed (*Acroptilon repens*)

Other Weeds of Concern

Present

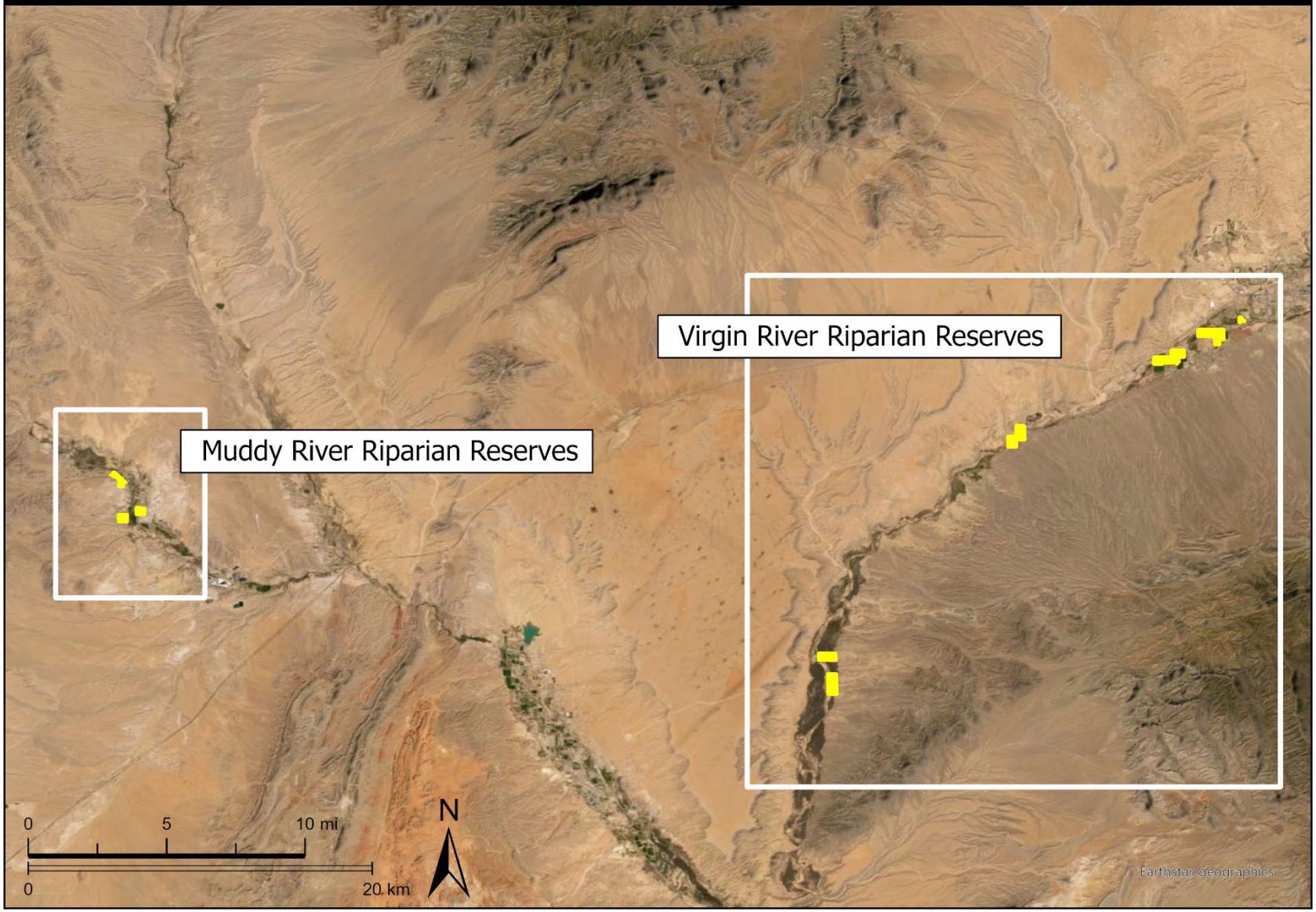
- Sahara Mustard (*Brassica tournefortii*)
- African Mustard (*Malcolmia africana*)
- London Rocket *(Sisymbrium irio)*
- Field Bindweed (*Convolvulus arvensis*)
- Fivehook Bassia (*Bassia hyssopifolia*)
- Kochia (*Bassia scoparia*)
- Silverleaf Nightshade (*Solanum elaeagnifolium*)
- Puncturevine (Tribulus terrestris)

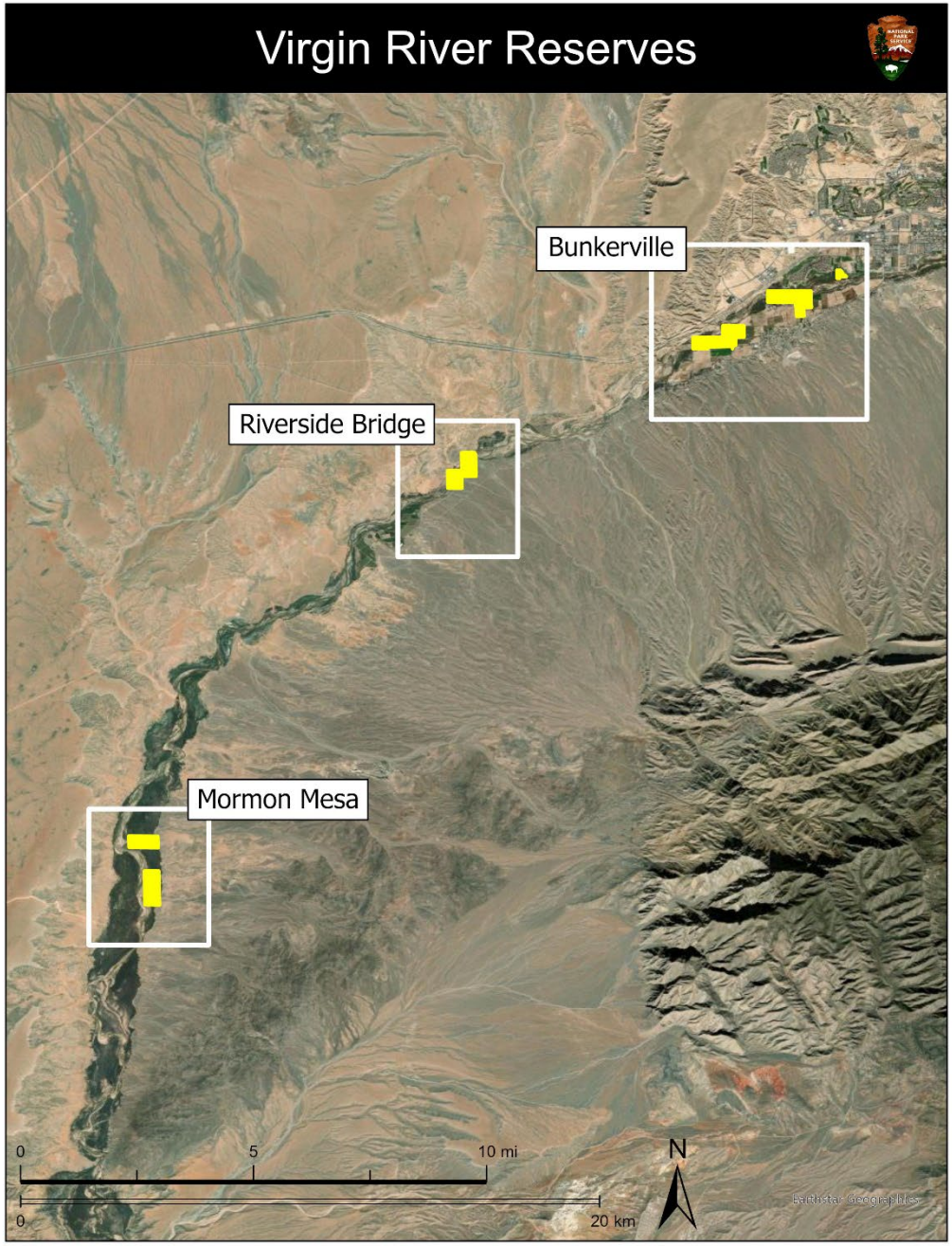
Other Weeds of Note

Present

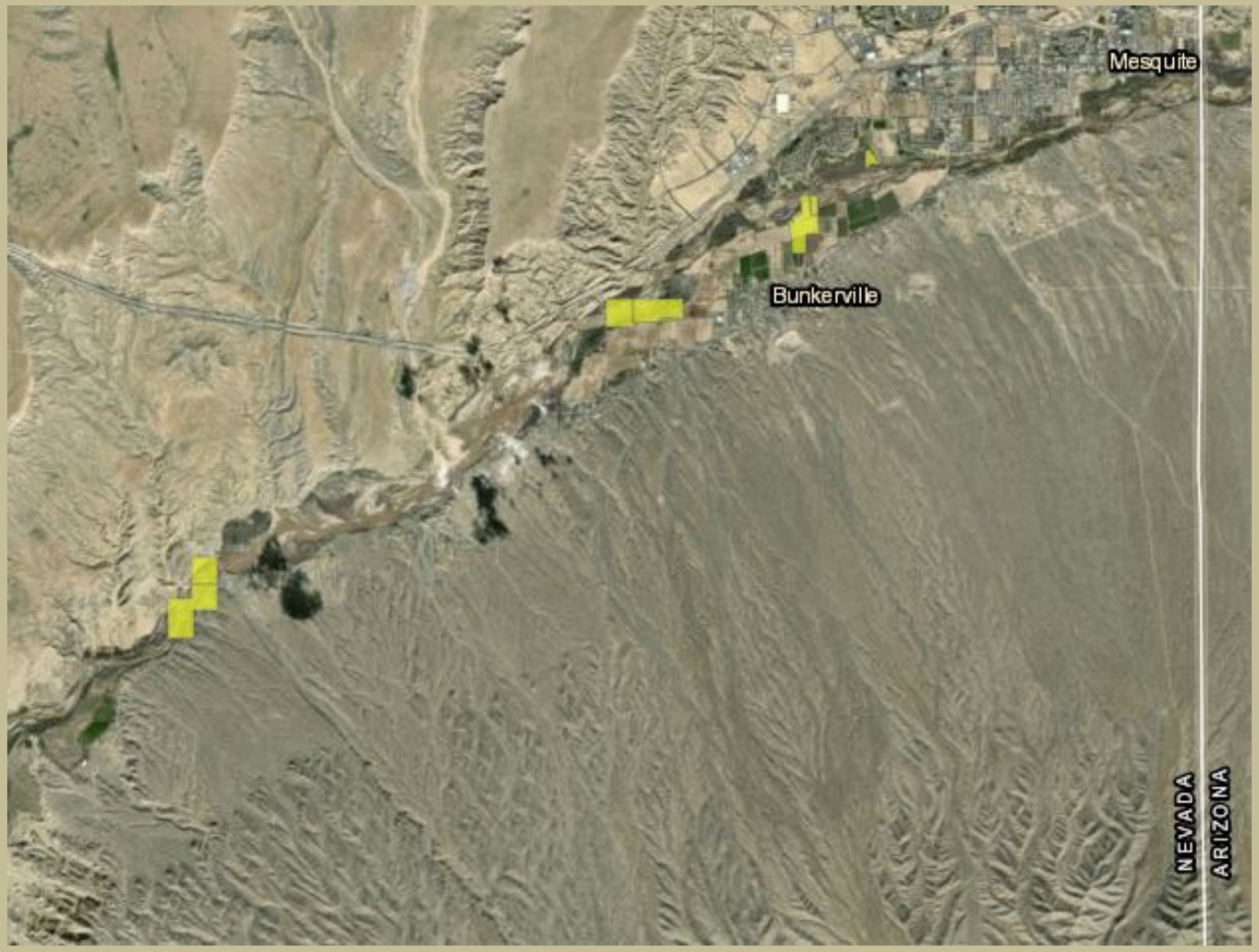
- Prickly Sowthistle (*Sonchus asper*)
- Russian Thistle (*Salsola* spp.)
- Sweetclover *(Melilotus* spp.*)*
- Common Knotgrass (*Polygonum aviculare*)
- Prickly Lettuce (*Lactuca serriola*)
- Rabbitsfoot Grass (*Polypogon monspeliensis*)
- Common Mallow (*Malva neglecta*)

Clark County Riparian Reserves




Virgin River Reserves
Bunkerville
Riverside Bridge
Mormon Mesa
0
5
10 mi
0
20 km
N

Virgin River County Parcels



Clark County Riparian Reserve
Virgin River Mastication Site, Winter FY26

IPMT

Lake Mead Invasive Plant Management Team
National Park Service
U.S. Department of the Interior



N

0 0.05 0.1 Miles

0 100 Meters

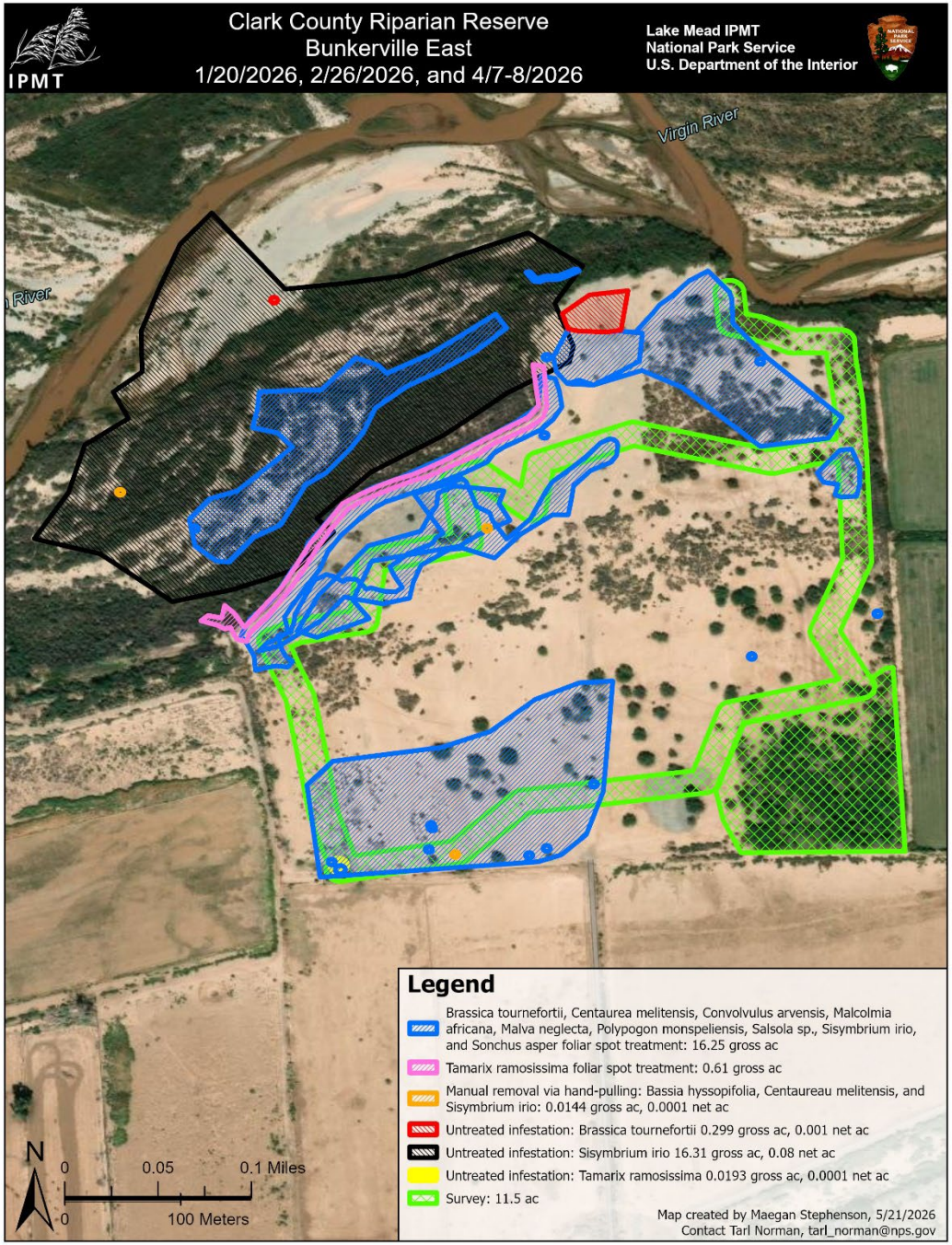
Legend

- Tamarix ramosissima basal bark treatment: 0.493 gross ac
- Tamarix ramosissima cut/stump treatment: 0.323 gross ac
- Lepidium latifolium foliar spot treatment: 6.275 gross ac
- Manual removal: Tamarix ramosissima 0.225 gross ac, 0.006 net ac
- Untreated infestation: Alhagi maurorum 0.731 gross ac, 0.621 net ac
- Untreated infestation: Tamarix ramosissima 0.882 gross ac, 0.018 net ac
- Clark County Riparian Reserve parcels

Map created by Maegan Stephenson, 6/8/2026
Contact Tarl Norman, tarl_norman@nps.gov

Virgin River Mastication Sites

- Continue to treat tamarisk resprouts
- Tamarisk is visibly being reduced in these sites
- Continue to monitor for and treat aggressive secondary invaders – tall whitetop and camelthorn
- Other invaders may include Malta starthistle, Sahara mustard and Russian thistle


IPMT
Clark County Riparian Reserve
Bunkerville East
1/20/2026, 2/26/2026, and 4/7-8/2026
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
Virgin River
River
N
0
0.05
0.1 Miles
0
100 Meters
Legend
Brassica tournefortii, Centaurea melitensis, Convolvulus arvensis, Malcolmia africana, Malva neglecta, Polypogon monspeliensis, Salsola sp., Sisymbrium irio, and Sonchus asper foliar spot treatment: 16.25 gross ac
Tamarix ramosissima foliar spot treatment: 0.61 gross ac
Manual removal via hand-pulling: Bassia hyssopifolia, Centaureau melitensis, and Sisymbrium irio: 0.0144 gross ac, 0.0001 net ac
Untreated infestation: Brassica tournefortii 0.299 gross ac, 0.001 net ac
Untreated infestation: Sisymbrium irio 16.31 gross ac, 0.08 net ac
Untreated infestation: Tamarix ramosissima 0.0193 gross ac, 0.0001 net ac
Survey: 11.5 ac
Map created by Maegan Stephenson, 5/21/2026
Contact Tarl Norman, tarl_norman@nps.gov


















CAUTION

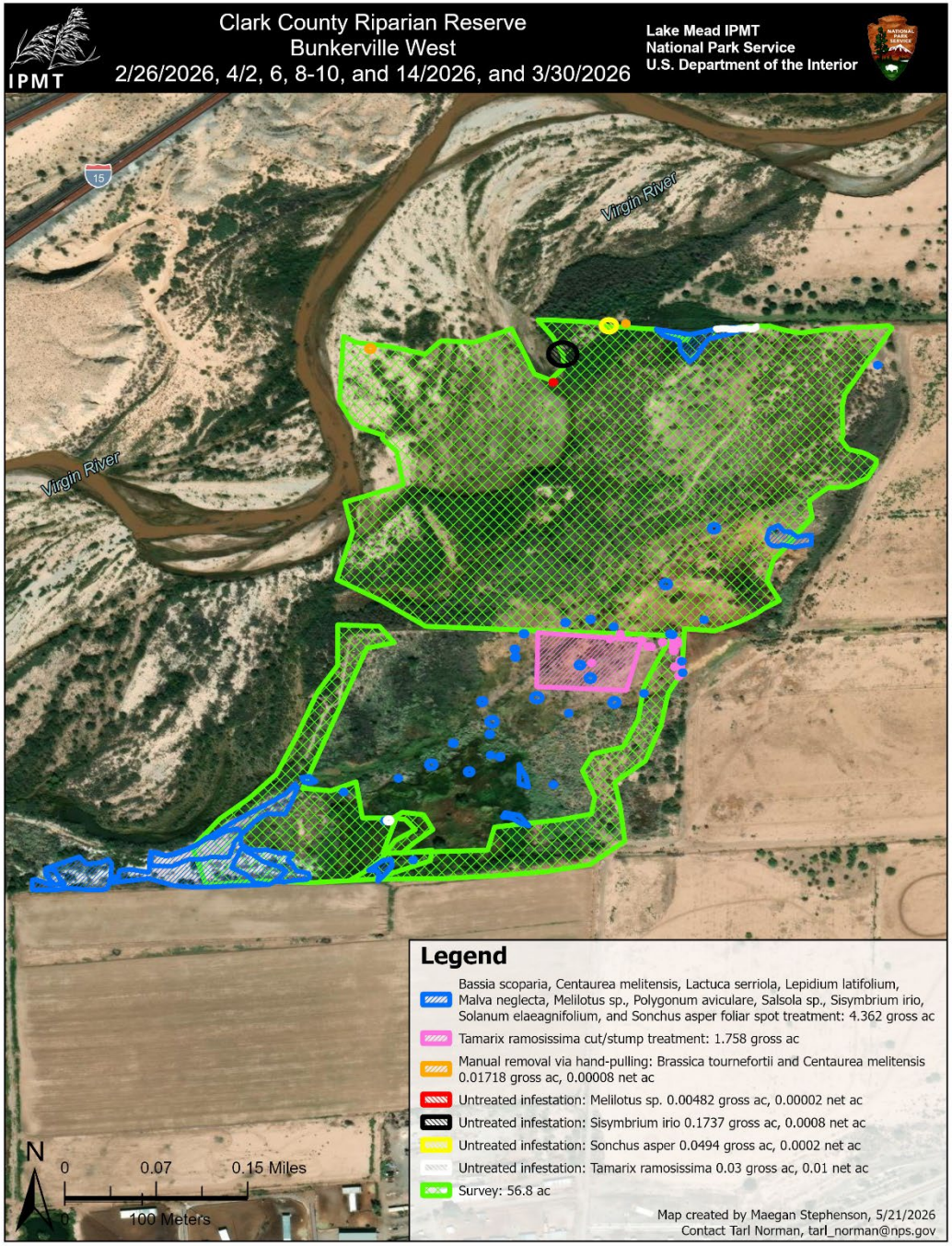






Bunkerville East Unit

- Initiate treatment of tamarisk resprouts within the masticated areas (basal bark)
- Monitor foliar treatment of tamarisk to treat any surviving plants
- Other secondary invaders may include Malta starthistle, Sahara mustard and Russian thistle


IPMT
Clark County Riparian Reserve
Bunkerville West
2/26/2026, 4/2, 6, 8-10, and 14/2026, and 3/30/2026
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
15
Virgin River
Virgin River
Legend
Bassia scoparia, Centaurea melitensis, Lactuca serriola, Lepidium latifolium, Malva neglecta, Melilotus sp., Polygonum aviculare, Salsola sp., Sisymbrium irio, Solanum elaeagnifolium, and Sonchus asper foliar spot treatment: 4.362 gross ac
Tamarix ramosissima cut/stump treatment: 1.758 gross ac
Manual removal via hand-pulling: Brassica tournefortii and Centaurea melitensis 0.01718 gross ac, 0.00008 net ac
Untreated infestation: Melilotus sp. 0.00482 gross ac, 0.00002 net ac
Untreated infestation: Sisymbrium irio 0.1737 gross ac, 0.0008 net ac
Untreated infestation: Sonchus asper 0.0494 gross ac, 0.0002 net ac
Untreated infestation: Tamarix ramosissima 0.03 gross ac, 0.01 net ac
Survey: 56.8 ac
N
0
0.07
0.15 Miles
0
100 Meters
Map created by Maegan Stephenson, 5/21/2026
Contact Tarl Norman, tarl_norman@nps.gov





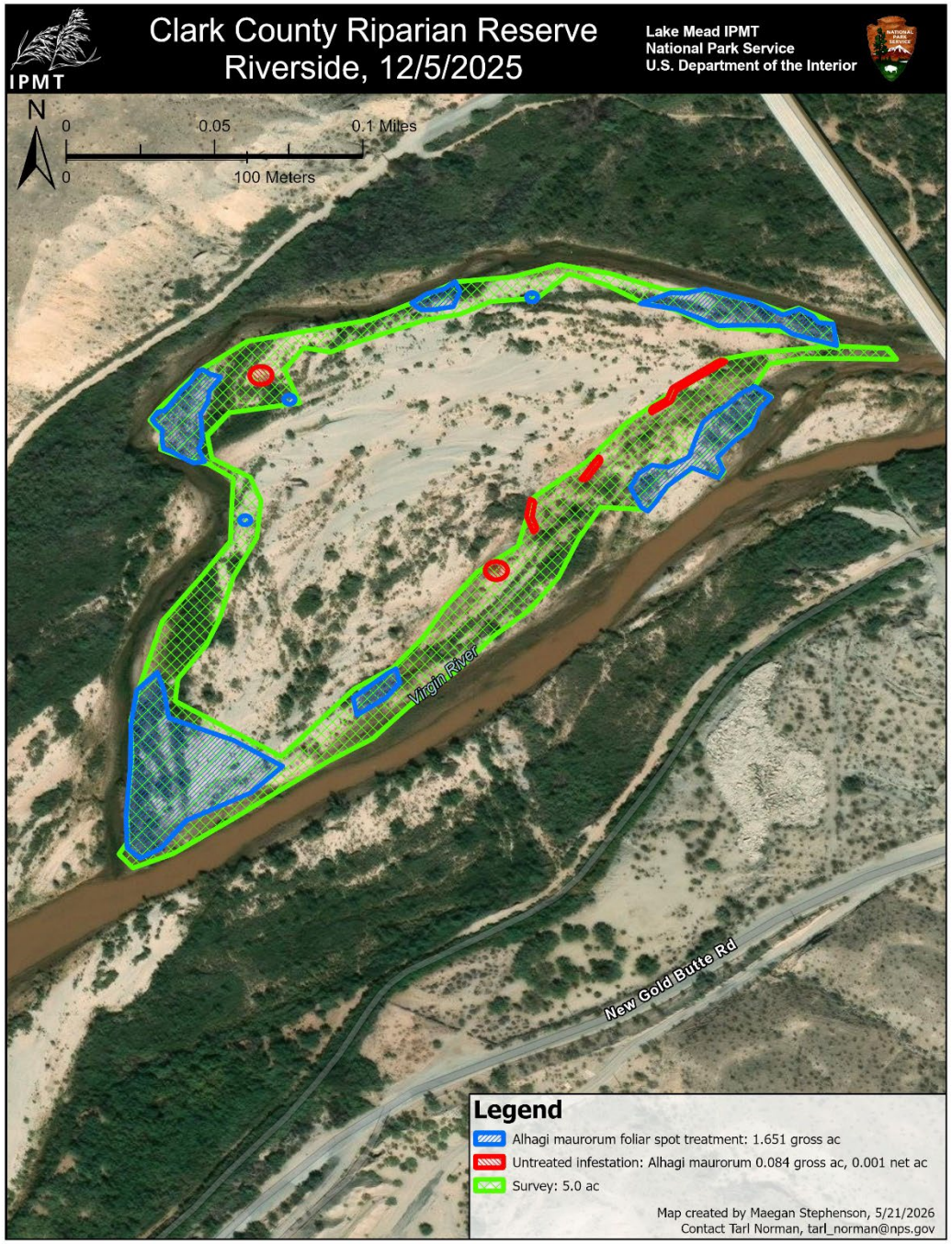




Bunkerville West Unit

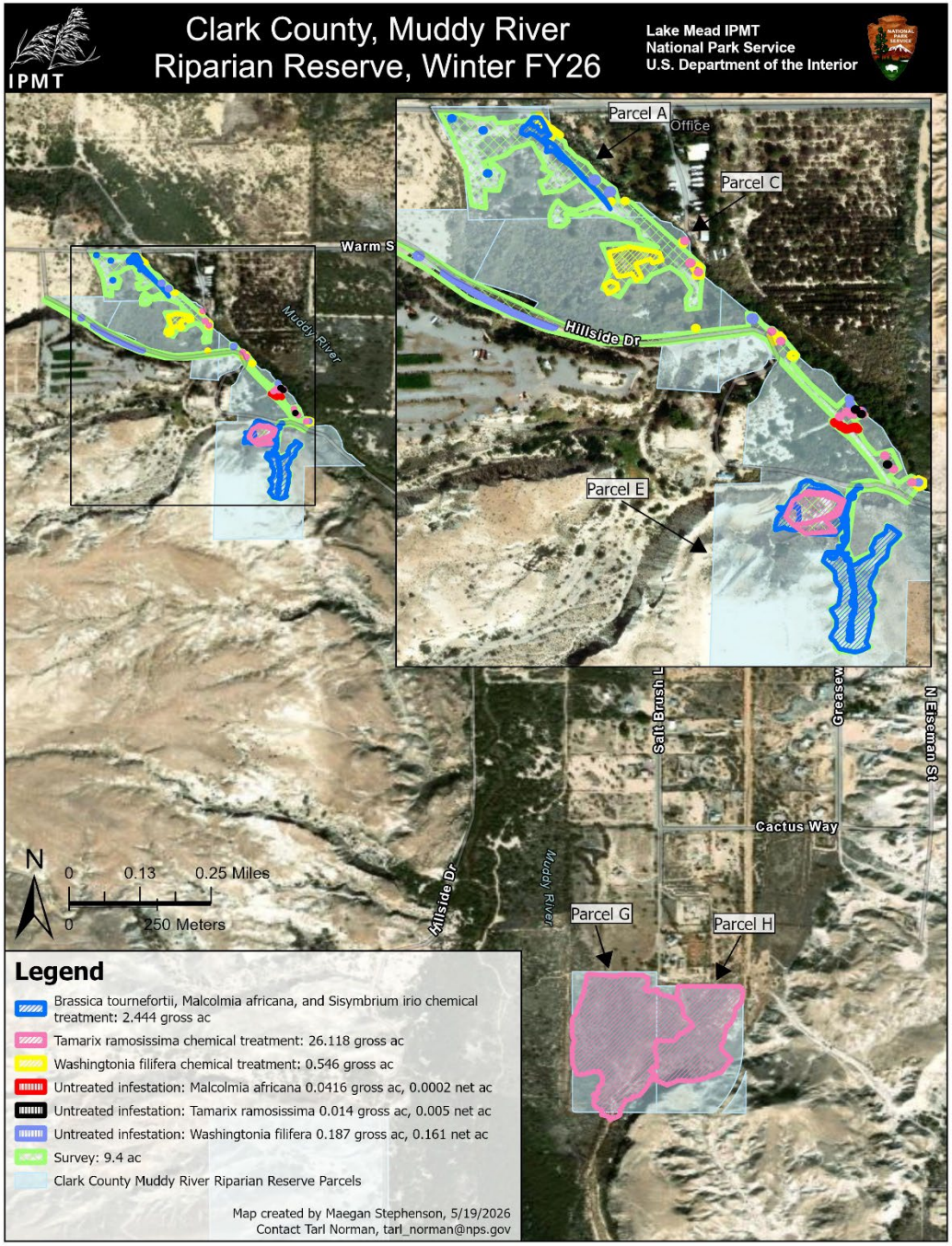
- Initiate treatment of tamarisk resprouts within the masticated areas
- Treat scattered tamarisk that was not included in the recent mastication
- Other secondary invaders may include Malta starthistle, Sahara mustard and Russian thistle

Riverside Unit



Riverside Unit

- Continue to monitor for and treat camelthorn
- Consider tamarisk control at this site
- Other invaders may include Malta starthistle, Sahara mustard and Russian thistle
- Nearby BLM mastication sites included some of these invaders


IPMT
Clark County, Muddy River Riparian Reserve, Winter FY26
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
Parcel A
Office
Parcel C
Parcel E
Parcel G
Parcel H
Warm S
Muddy River
Hillside Dr
Salt Brush L
Greasew
N Eisenman St
Cactus Way
N
0
0.13
0.25 Miles
0
250 Meters
Legend
Brassica tournefortii, Malcolmia africana, and Sisymbrium irio chemical treatment: 2.444 gross ac
Tamarix ramosissima chemical treatment: 26.118 gross ac
Washingtonia filifera chemical treatment: 0.546 gross ac
Untreated infestation: Malcolmia africana 0.0416 gross ac, 0.0002 net ac
Untreated infestation: Tamarix ramosissima 0.014 gross ac, 0.005 net ac
Untreated infestation: Washingtonia filifera 0.187 gross ac, 0.161 net ac
Survey: 9.4 ac
Clark County Muddy River Riparian Reserve Parcels
Map created by Maegan Stephenson, 5/19/2026
Contact Tarl Norman, tarl_norman@nps.gov










STIHL








STIHL





Annual Mustard Control

African mustard in Parcel E



Muddy River Units

- Continue to treat small pockets of tamarisk
- Continue treatments for invasive palm trees in Parcels A, B and E
- Survey and treat invasive annual mustards (among others) as needed

Boulder City Conservation Easement Weed Survey
MSHCP Annual Project Review 2026
Project 2021-NPS-2005P



Project Overview

- Inter-local Agreement between Clark County and NPS May 2026 to October 2026 (close out)
- Conduct surveys of routes within the BCCE to detect non-native (exotic) invasive 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



Russian Thistle Control

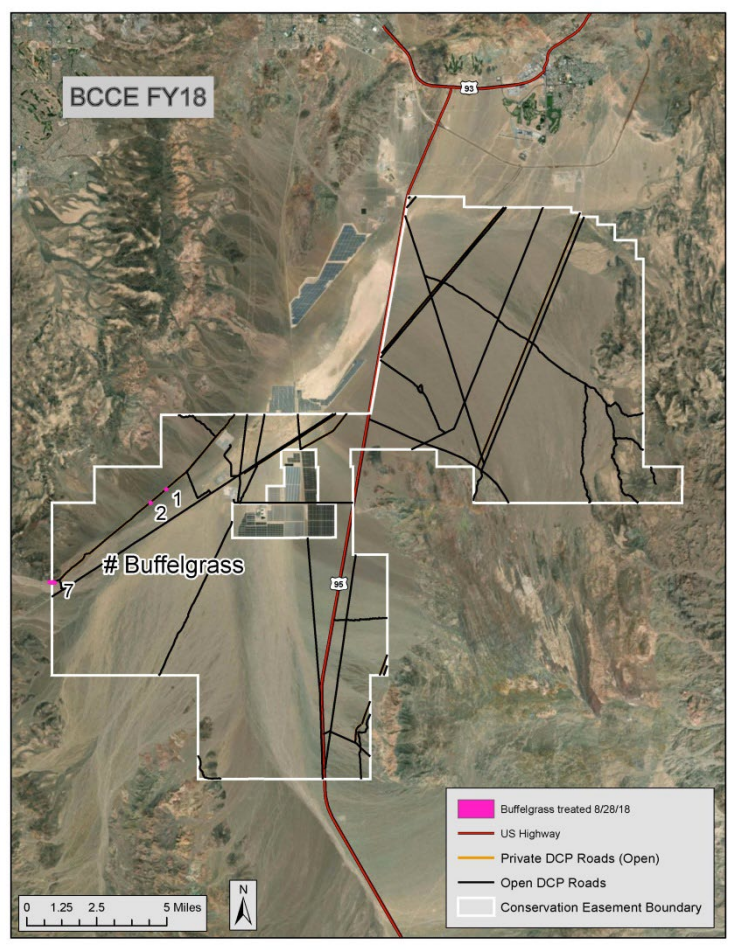
Spot spray application of herbicide

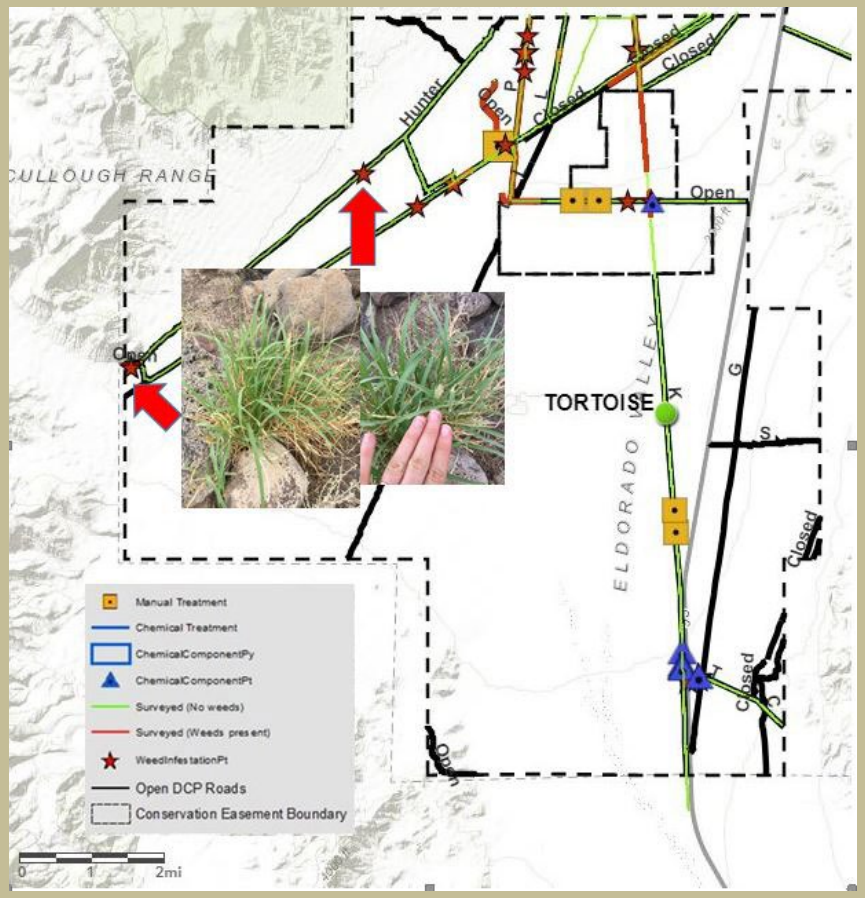


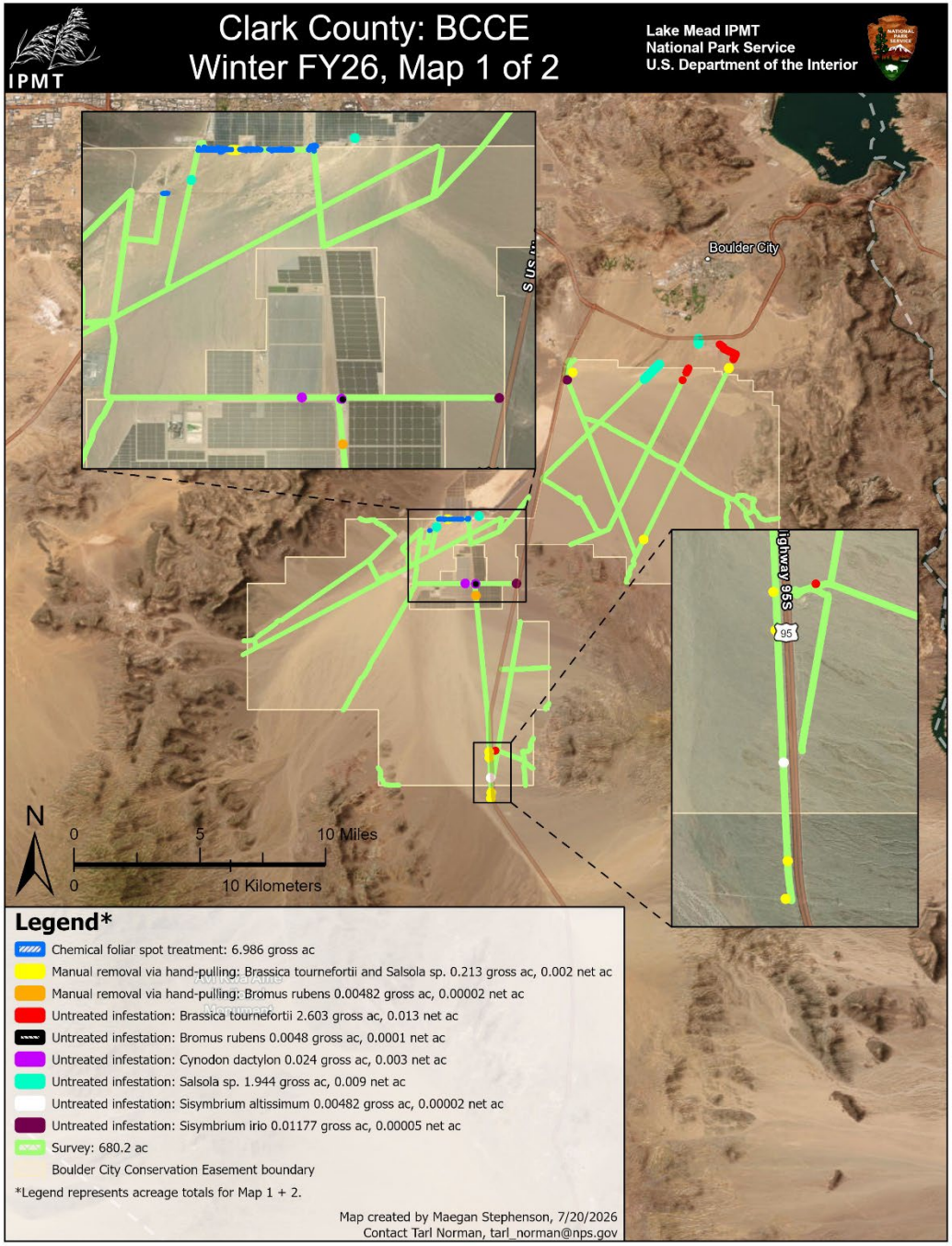




Buffelgrass Detection and Treatments



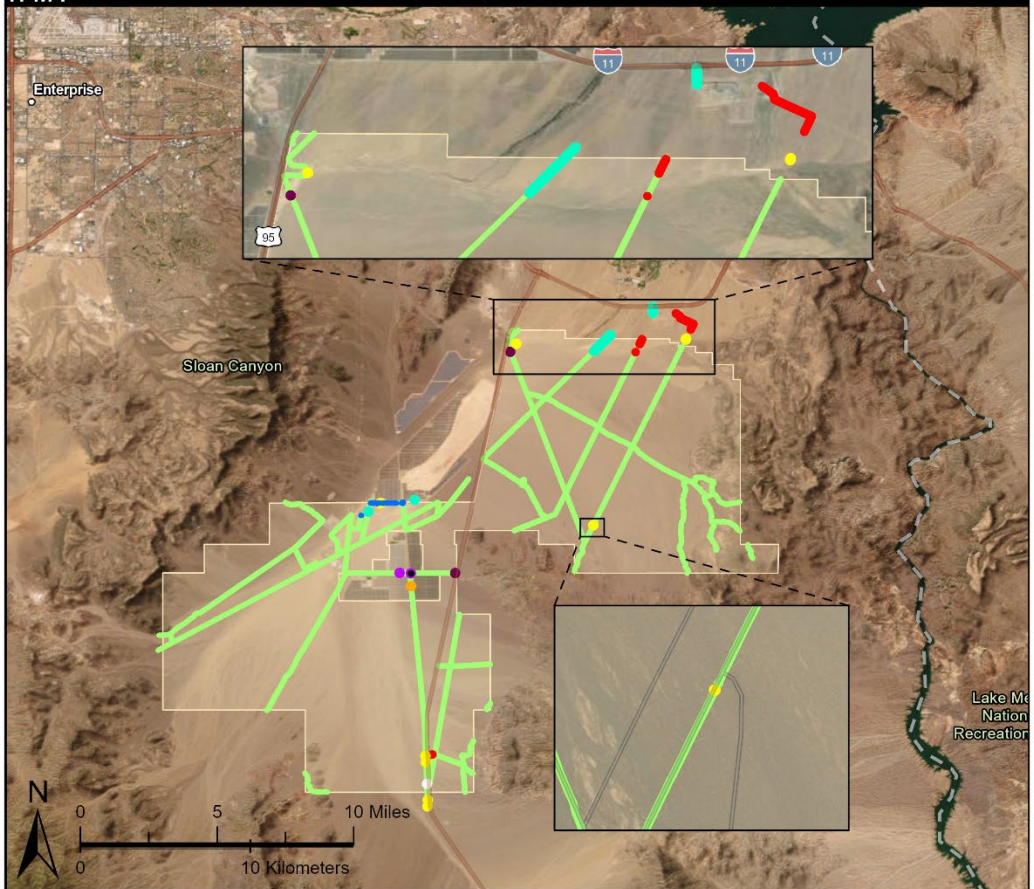



IPMT
Clark County: BCCE
Winter FY26, Map 1 of 2
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
Boulder City
Highway 95S
95
N
0
5
10 Miles
0
10 Kilometers
Legend*
Chemical foliar spot treatment: 6.986 gross ac
Manual removal via hand-pulling: Brassica tournefortii and Salsola sp. 0.213 gross ac, 0.002 net ac
Manual removal via hand-pulling: Bromus rubens 0.00482 gross ac, 0.00002 net ac
Untreated infestation: Brassica tournefortii 2.603 gross ac, 0.013 net ac
Untreated infestation: Bromus rubens 0.0048 gross ac, 0.0001 net ac
Untreated infestation: Cynodon dactylon 0.024 gross ac, 0.003 net ac
Untreated infestation: Salsola sp. 1.944 gross ac, 0.009 net ac
Untreated infestation: Sisymbrium altissimum 0.00482 gross ac, 0.00002 net ac
Untreated infestation: Sisymbrium irio 0.01177 gross ac, 0.00005 net ac
Survey: 680.2 ac
Boulder City Conservation Easement boundary
*Legend represents acreage totals for Map 1 + 2.
Map created by Maegan Stephenson, 7/20/2026
Contact Tarl Norman, tarl_norman@nps.gov

Clark County: BCCE
Winter FY26, Map 2 of 2

IPMT

Lake Mead IPMT
National Park Service
U.S. Department of the Interior



Legend*

- Chemical foliar spot treatment: 6.986 gross ac
- Manual removal via hand-pulling: Brassica tournefortii and Salsola sp. 0.213 gross ac, 0.002 net ac
- Manual removal via hand-pulling: Bromus rubens 0.00482 gross ac, 0.00002 net ac
- Untreated infestation: Brassica tournefortii 2.603 gross ac, 0.013 net ac
- Untreated infestation: Bromus rubens 0.0048 gross ac, 0.0001 net ac
- Untreated infestation: Cynodon dactylon 0.024 gross ac, 0.003 net ac
- Untreated infestation: Salsola sp. 1.944 gross ac, 0.009 net ac
- Untreated infestation: Sisymbrium altissimum 0.00482 gross ac, 0.00002 net ac
- Untreated infestation: Sisymbrium irio 0.01177 gross ac, 0.00005 net ac
- Survey: 680.2 ac
- Boulder City Conservation Easement boundary

*Legend represents acreage totals for Map 1 + 2.

Map created by Maegan Stephenson, 7/20/2026
Contact Tarl Norman, tarl_norman@nps.gov



Neighborly?

Weed infestations on neighboring lands

Near Future Work

- Continue late summer surveys in 2026
- Continue to survey intensely over the next few weeks from recent August rains
- Focus on previous buffelgrass and puncturevine areas/warm season species
- October 2026 annual report and project close out
- New agreement?



Acknowledgements

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- Caryn Wright and Elizabeth Herrmann, Clark County Desert Conservation Program
- NPS IPMT Staff: Maegan Stephenson, Tyler Jack, Ouen Moore, Brandon Blackburn, Jacob Pope, Alex Demers, Wesley Scott and Kole Wesen.