Vegetation Management on Clark County MSHCP Properties

Curt Deuser

Supervisory Ecologist, National Park Service

Lake Mead Inter-Regional Invasive Plant Management Team

MSHCP Annual Project Progress Report Symposium

August 23, 2023

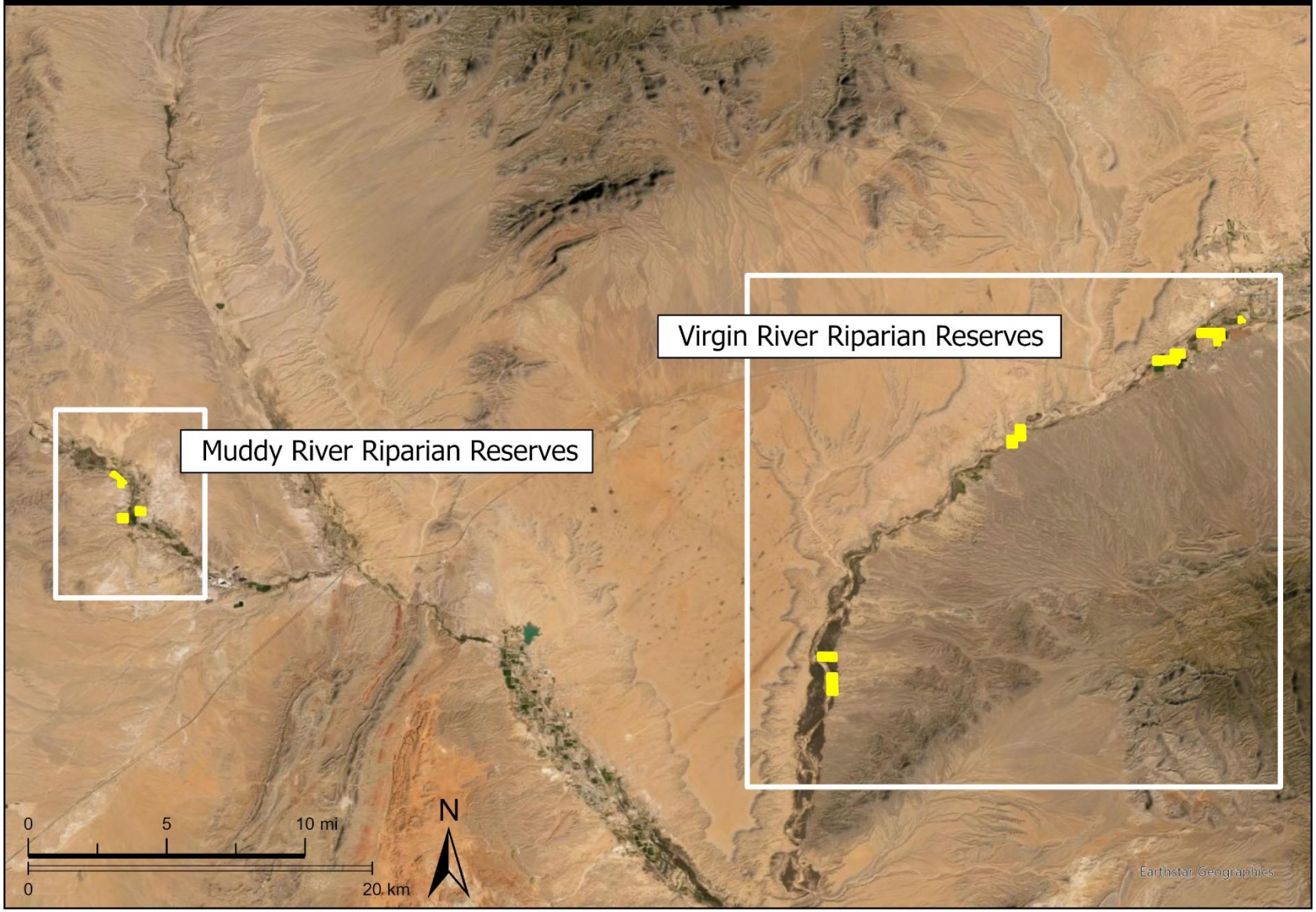
Riparian Reserves Vegetation Management

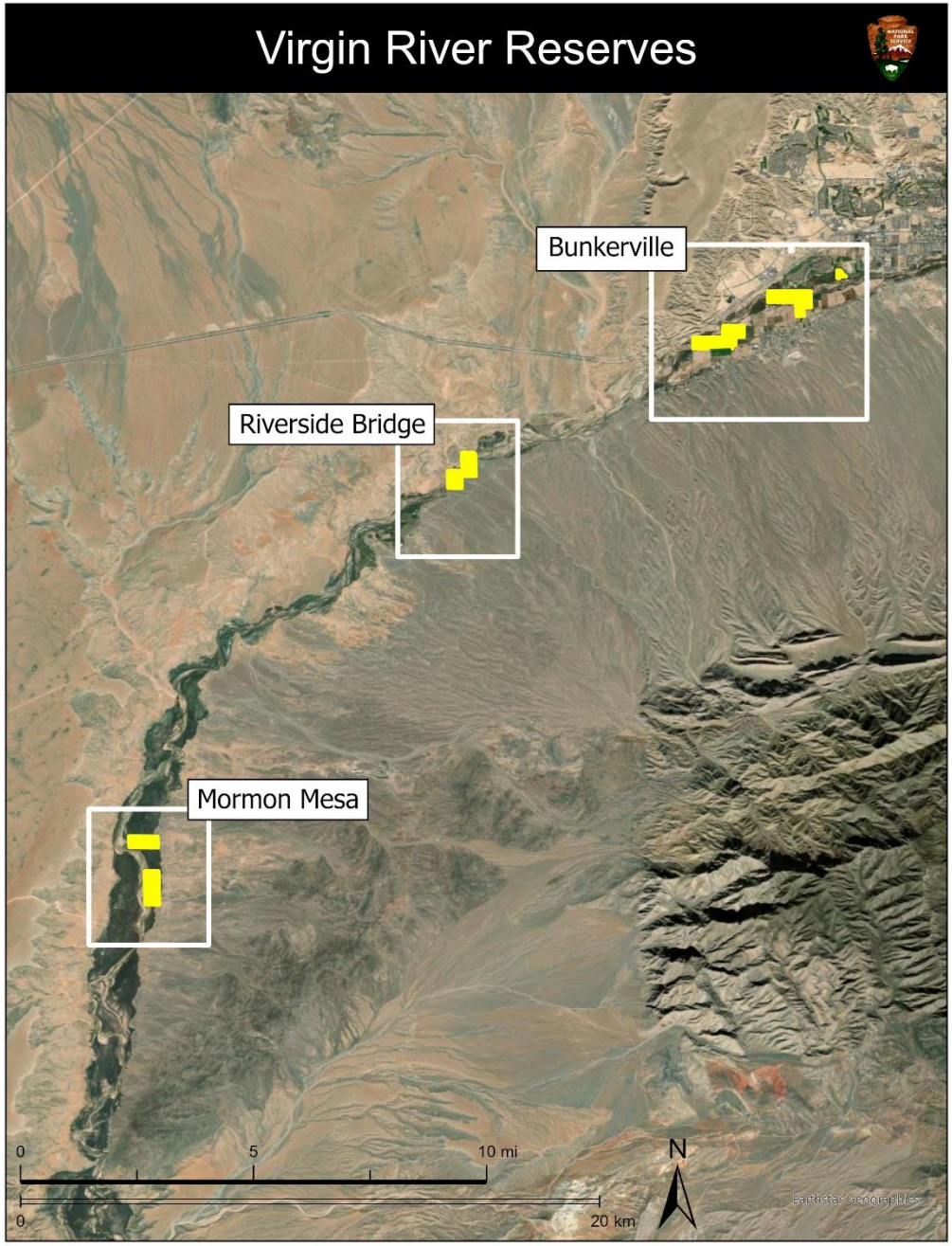
2023 MSHCP Annual Project Progress Symposium (2019-NPS-1910C)

Project Information

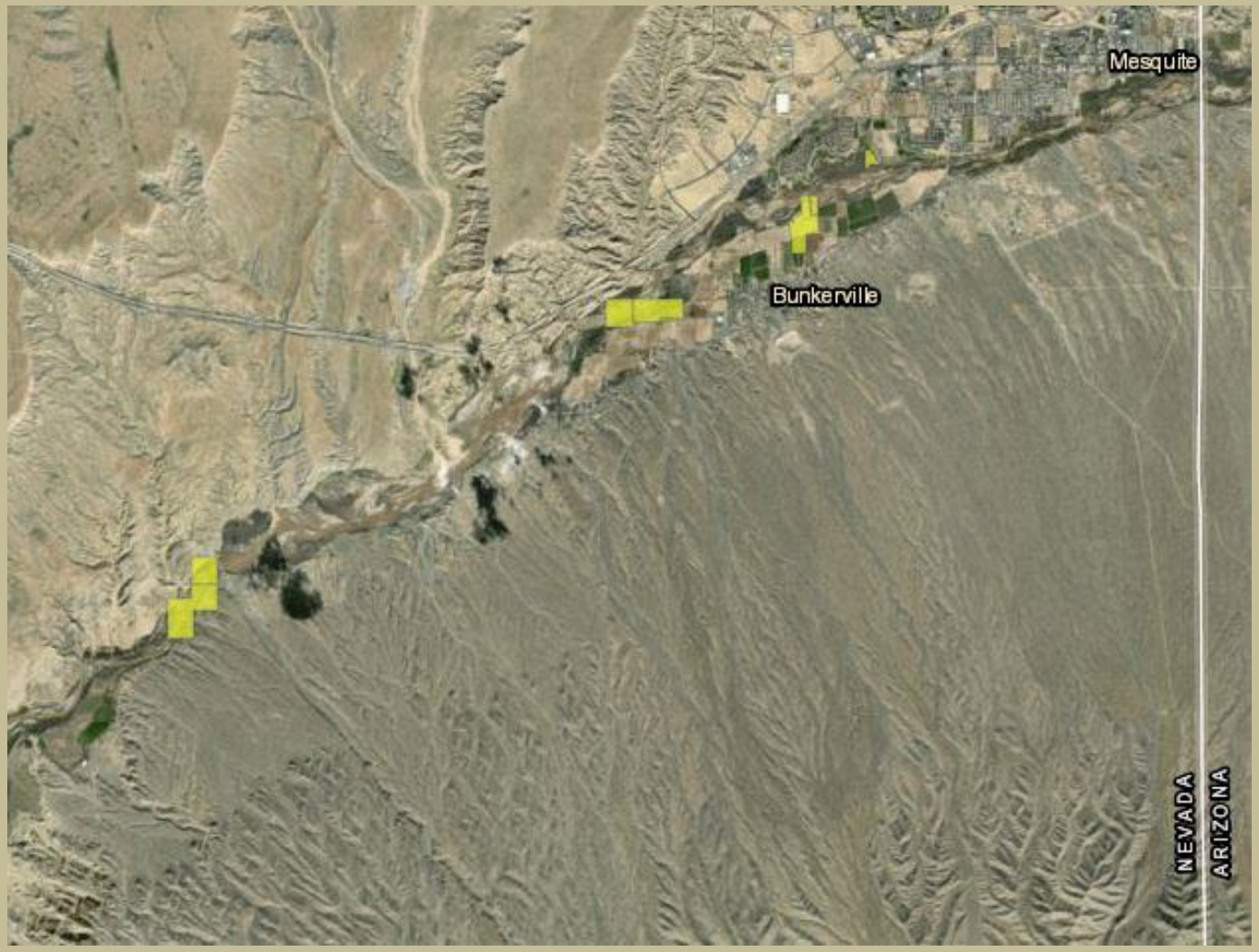
- Awarded late April 2021 through July 2023
- Two year renewal extended from July 2023-July 15, 2025
- Purpose: Conduct inventory and weed treatments of non-native invasive vegetation
- Prioritization: Early detection rapid response
- Prioritize treatments of well establish more widespread species

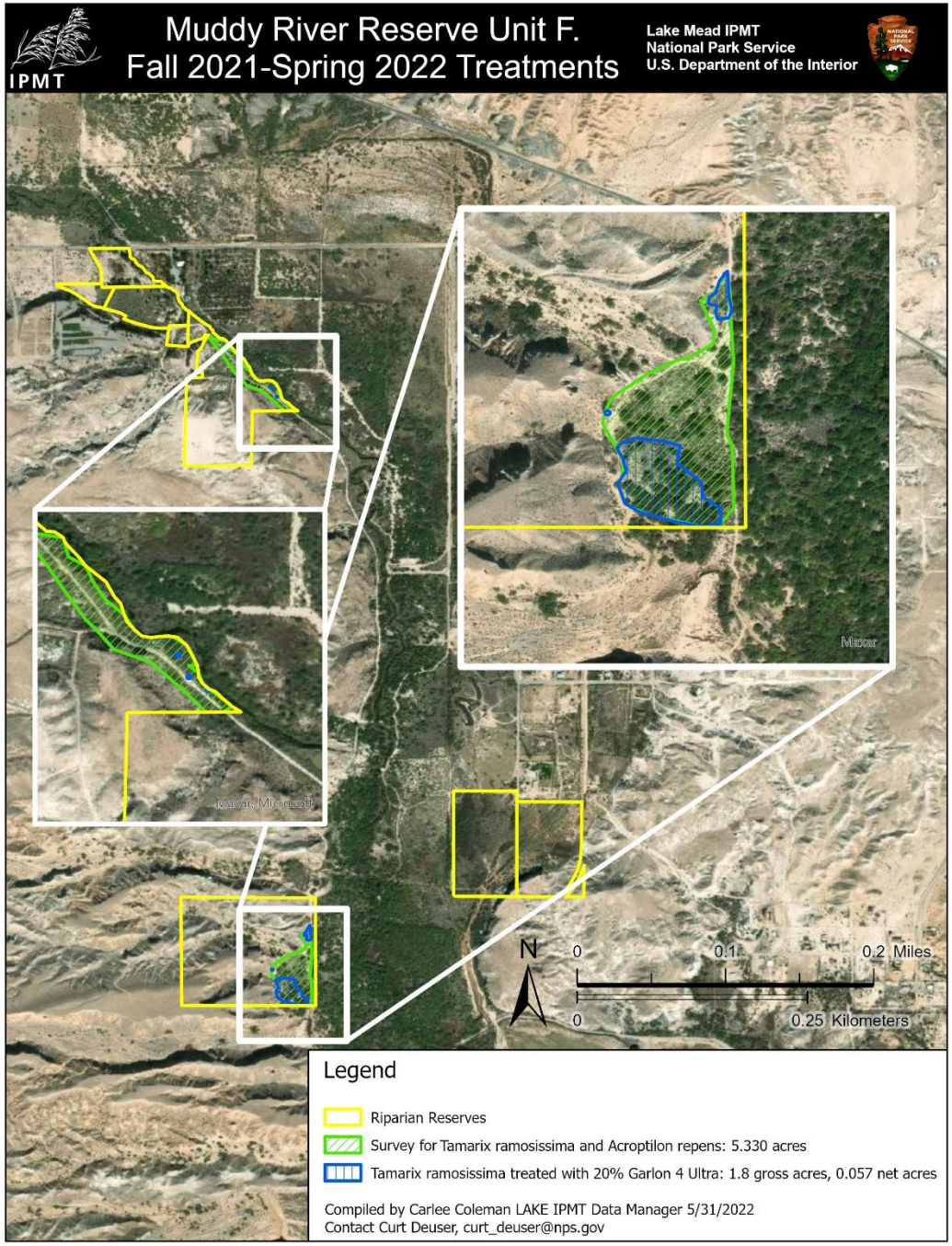
Clark County Riparian Reserves




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

Virgin River County Parcels

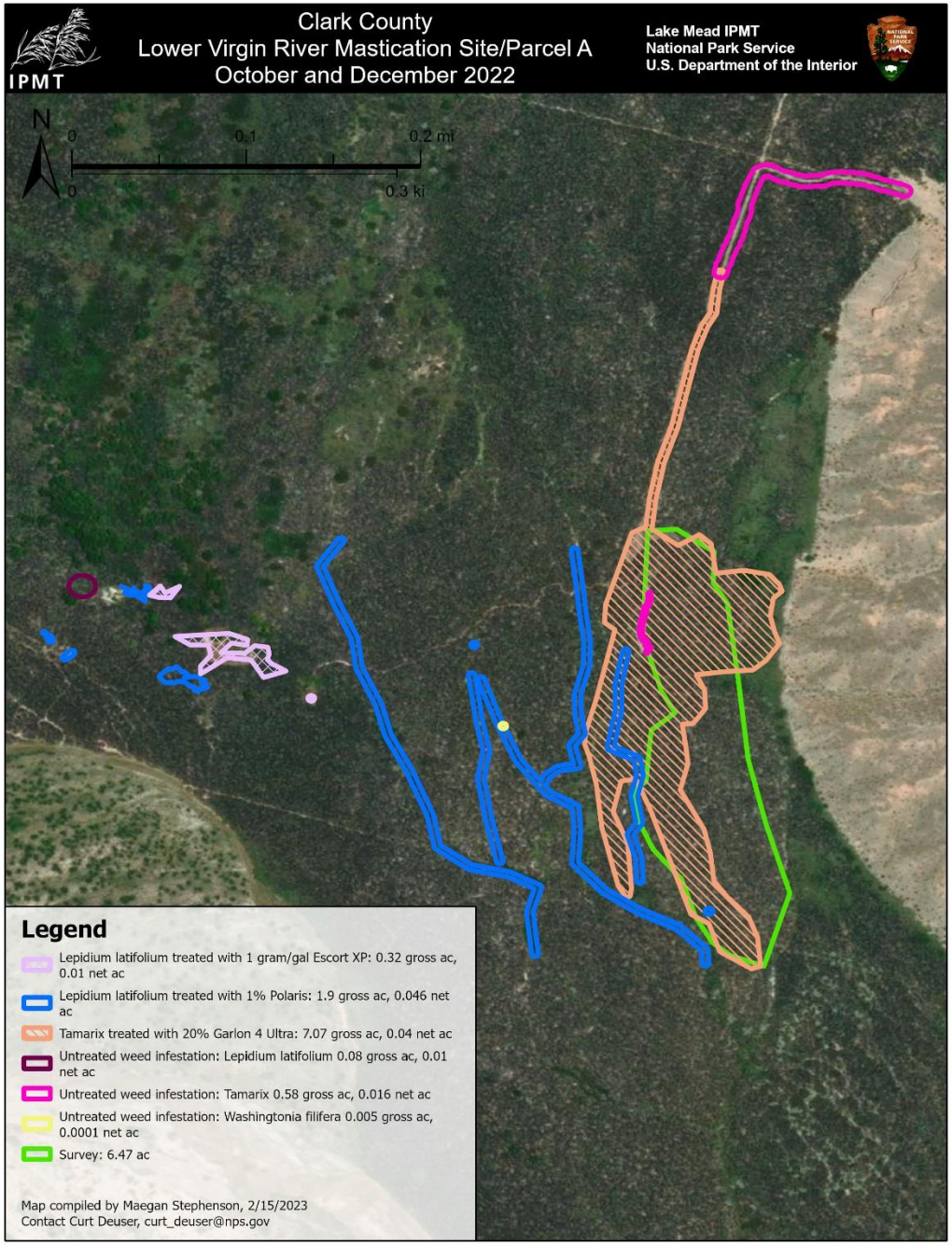



IPMT
Muddy River Reserve Unit F.
Fall 2021-Spring 2022 Treatments
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
N
0
0.1
0.2 Miles
0
0.25 Kilometers
Legend
Riparian Reserves
Survey for Tamarix ramosissima and Acroptilon repens: 5.330 acres
Tamarix ramosissima treated with 20% Garlon 4 Ultra: 1.8 gross acres, 0.057 net acres
Compiled by Carlee Coleman LAKE IPMT Data Manager 5/31/2022
Contact Curt Deuser, curt_deuser@nps.gov

Priority Weeds of Concern

<u>Present</u>

- Tall Whitetop (*Lepidium latifolium*)
- Camelthorn (*Alhagi maurorum*)
- *Tamarix species (Tamarix aphylla/ramosissima)*
- Malta Starthistle (*Centaura melitensis*)
- Russian Olive (Elaegnus angustifolia)
- Palm trees (date and fan palm)
- Giant Cane Grass (*Arundo donax*)
- Russian knapweed (*Acroptilon repens*)


IPMT
Clark County
Lower Virgin River Mastication Site/Parcel A
October and December 2022
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
N
0
0.1
0.2 mi
0
0.3 ki
Legend
Lepidium latifolium treated with 1 gram/gal Escort XP: 0.32 gross ac, 0.01 net ac
Lepidium latifolium treated with 1% Polaris: 1.9 gross ac, 0.046 net ac
Tamarix treated with 20% Garlon 4 Ultra: 7.07 gross ac, 0.04 net ac
Untreated weed infestation: Lepidium latifolium 0.08 gross ac, 0.01 net ac
Untreated weed infestation: Tamarix 0.58 gross ac, 0.016 net ac
Untreated weed infestation: Washingtonia filifera 0.005 gross ac, 0.0001 net ac
Survey: 6.47 ac
Map compiled by Maegan Stephenson, 2/15/2023
Contact Curt Deuser, curt_deuser@nps.gov

IPMT
Invasive Plant
Management Team
Lake Mead

Invasive Plant Chemical Treatment Report

Partner: Clark County
Location: Lower Virgin River Mastication Site/Parcel A
Date(s): October 16, 2022
Treatment Method(s): Chemical foliar spot treatment using Escort XP via backpack sprayers.

Accomplishments

Species	Total Surveyed Acres	Gross Infested Acres Treated	Infested Acres	Treated Acres
Lepidium latifolium Tall whitetop	6.79	0.32	0.01	0.01

Herbicide Use

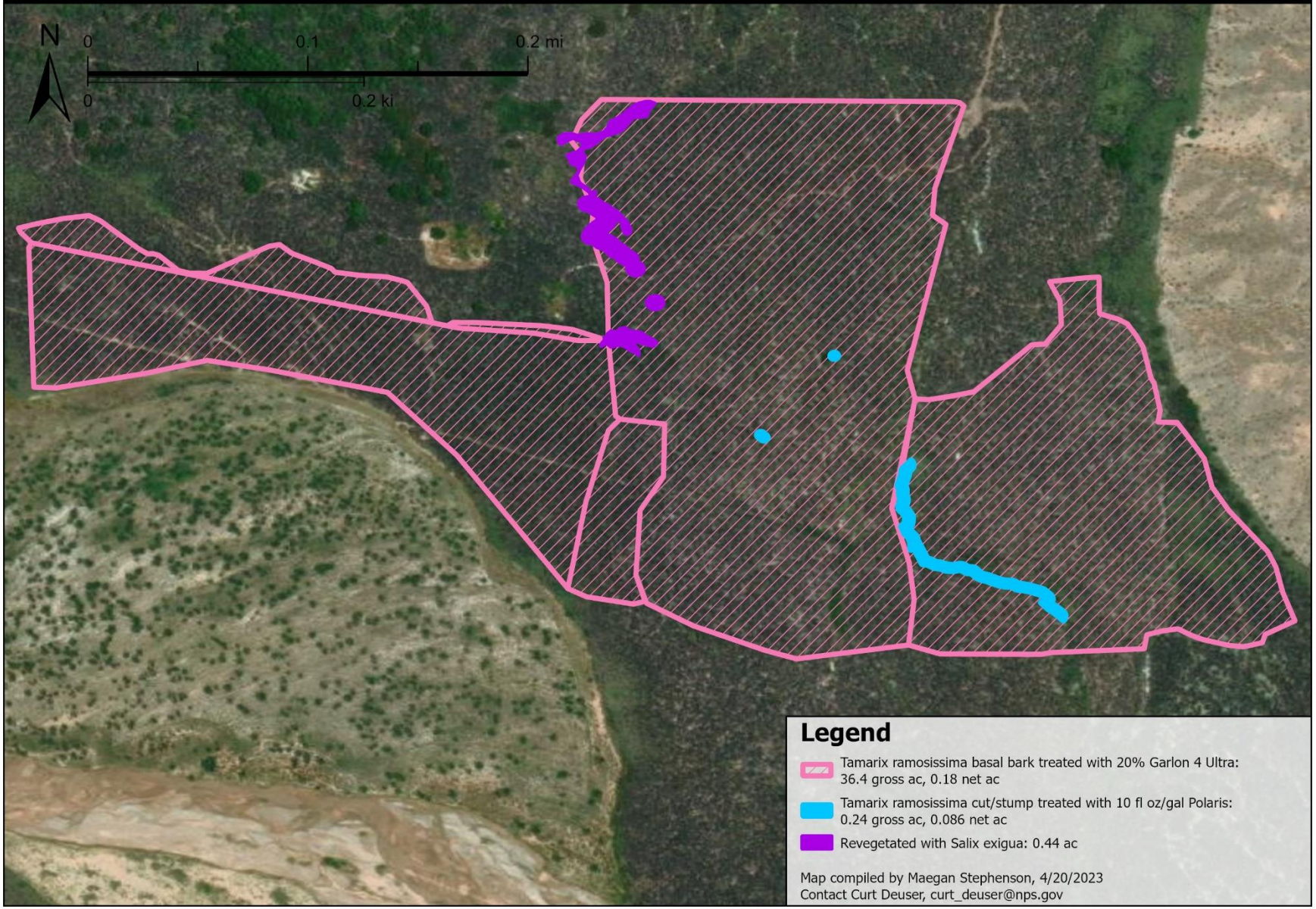
Herbicide	Amount	Mix Rate	Surfactant	Total Mix
Escort XP	4 grams	1 gram/gal	Target Pro Spreader	4 gallons

These definitions are based on the 2019 NISIMS Fields and Domains guide. Please refer to https://irma.nps.gov/DataStore/DownloadFile/617128 for more information. These definitions can also be found on the back of this report. Compiled by Maegan Stephenson. For questions, please contact Curt Deuser at curt_deuser@nps.gov or (702) 281-8120.

Clark County: Virgin River Mastication Site
1/18-20/2023 and 3/4-6/2023

IPMT

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



IPMT
Invasive Plant
Management Team
Lake Mead

Invasive Plant Chemical Treatment Report

Partner: Clark County
Location: Virgin River Mastication Site
Date(s): 3/5-6/2023
Treatment Method(s): Chemical cut/stump treatment using 10 fl oz/gal Polaris via backpack sprayers.

Accomplishments

Species	Total Surveyed Acres	Gross Infested Acres Treated	Infested Acres	Treated Acres
Tamarix ramosissima Salt cedar	0.24	0.24	0.086	0.086

Herbicide Use

Herbicide	Amount	Mix Rate	Surfactant	Total Mix
Polaris	12 fl oz	10 fl oz/gal	None	1.25 gallons

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Treating Tamarisk Resprouts

Invasive Plant Chemical Treatment Report

Partner: Clark County
Location: Virgin River Mastication Site
Date(s): 1/18-20/2023
Treatment Method(s): Chemical basal bark treatment using 20% Garlon 4 Ultra via backpack sprayers.

Accomplishments

Species	Total Surveyed Acres	Gross Infested Acres Treated	Infested Acres	Treated Acres
Tamarix ramosissima Salt cedar	36.4	36.4	0.18	0.18

Herbicide Use

Herbicide	Amount	Mix Rate	Surfactant	Total Mix
Garlon 4 Ultra	12.9 gallons	20%	JLB Oil Plus Improved	64.5 gallons

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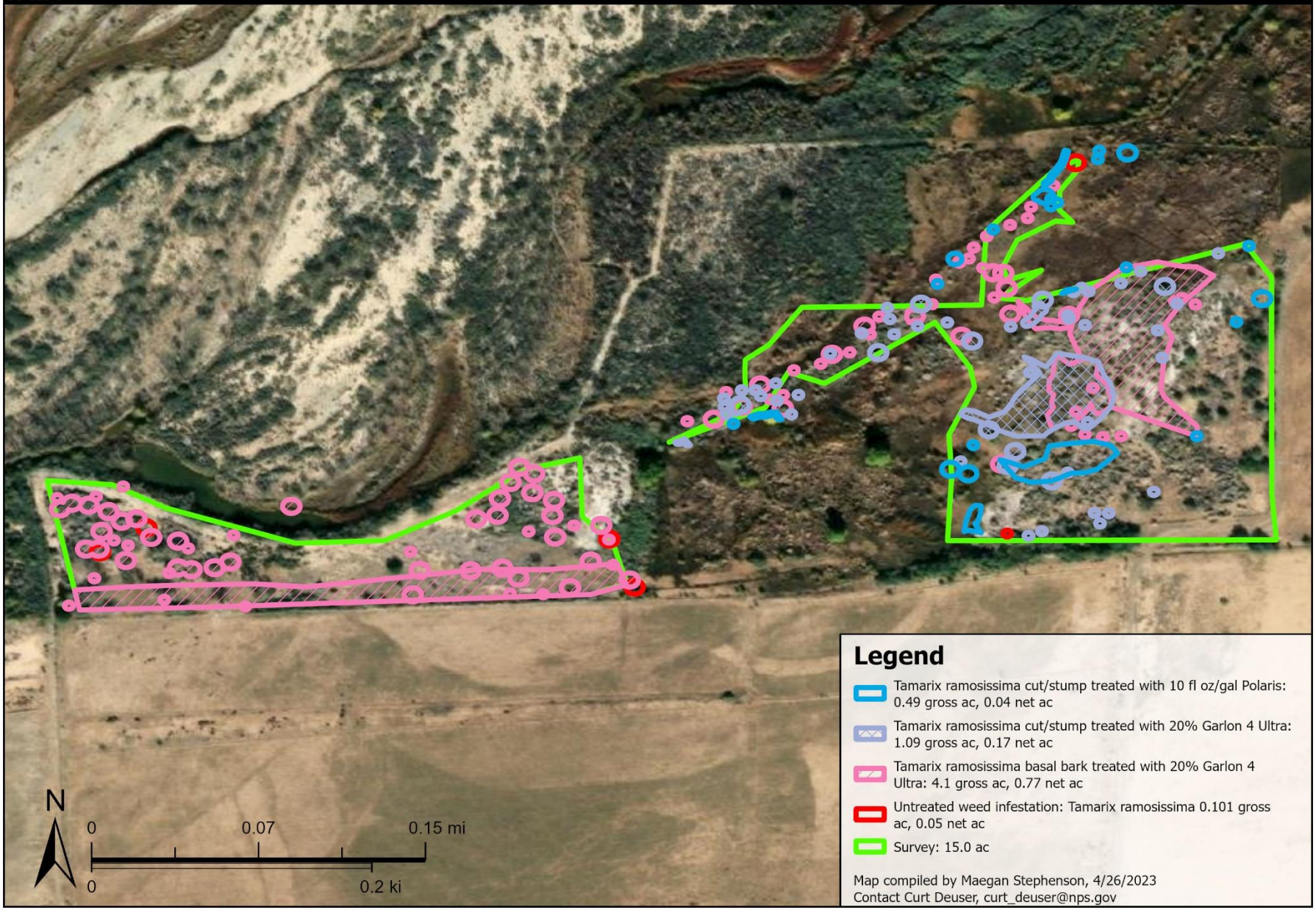
Clark County: Bunkerville West
1/23/2023 and 2/15-19/2023

IPMT

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



Legend

- Tamarix ramosissima cut/stump treated with 10 fl oz/gal Polaris: 0.49 gross ac, 0.04 net ac
- Tamarix ramosissima cut/stump treated with 20% Garlon 4 Ultra: 1.09 gross ac, 0.17 net ac
- Tamarix ramosissima basal bark treated with 20% Garlon 4 Ultra: 4.1 gross ac, 0.77 net ac
- Untreated weed infestation: Tamarix ramosissima 0.101 gross ac, 0.05 net ac
- Survey: 15.0 ac

Map compiled by Maegan Stephenson, 4/26/2023
Contact Curt Deuser, curt_deuser@nps.gov

IPMT
Invasive Plant
Management Team
Lake Mead

Invasive Plant Chemical Treatment Report

Partner: Clark County
Location: Bunkerville West
Date(s): 2/15-19/2023
Treatment Method(s): Chemical basal bark treatment using 20% Garlon 4 Ultra via backpack sprayers.

Accomplishments

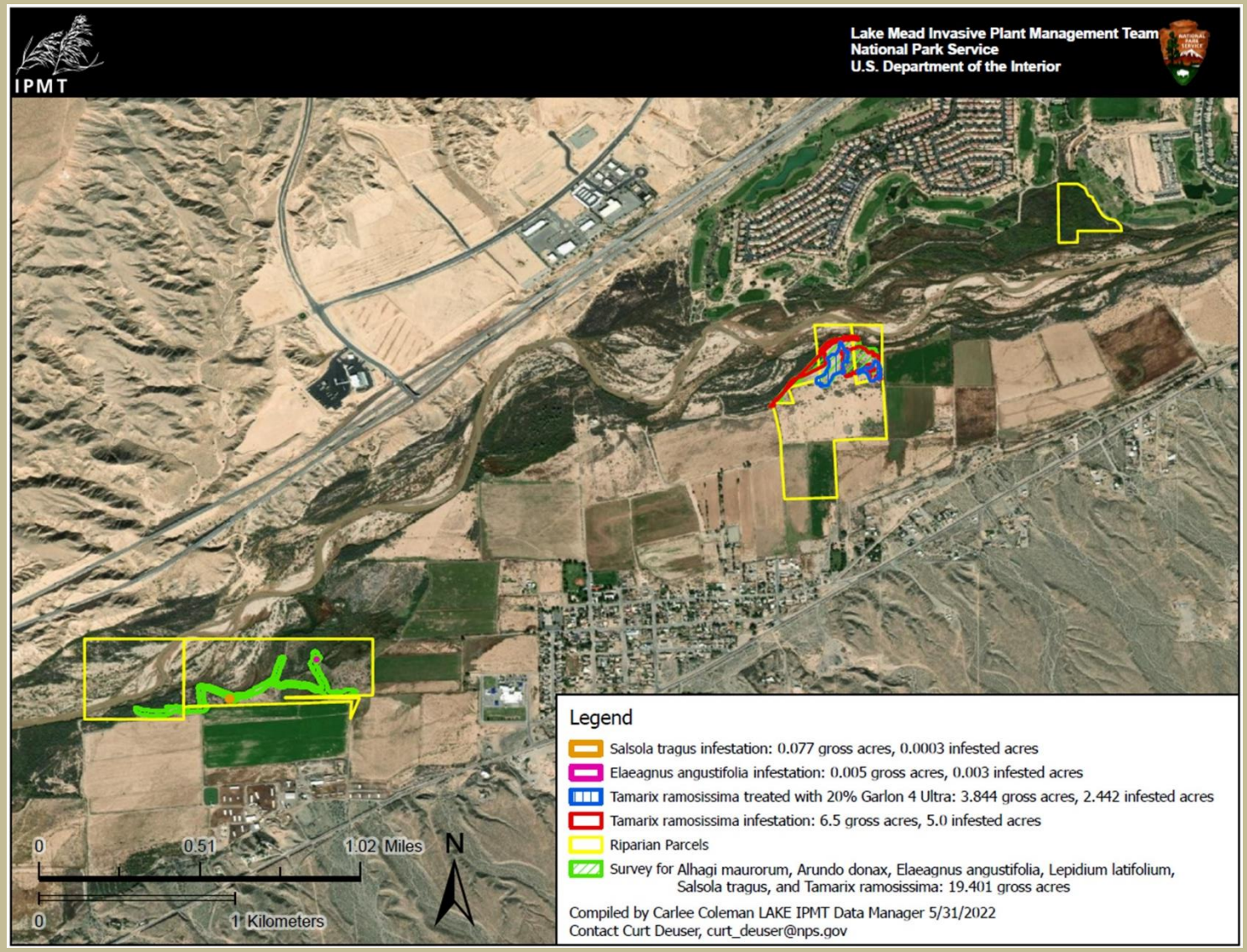
Species	Total Surveyed Acres	Gross Infested Acres Treated	Infested Acres	Treated Acres
Tamarix ramosissima Salt cedar	15.0	4.1	0.77	0.77

Herbicide Use

Herbicide	Amount	Mix Rate	Surfactant	Total Mix
Garlon 4 Ultra	2.79 gallons	20%	JLB Oil Plus Improved	13.95 gallons

These definitions are based on the 2019 NISIMS Fields and Domains guide. Please refer to https://irma.nps.gov/DataStore/DownloadFile/617128 for more information. These definitions can also be found on the back of this report. Compiled by Maegan Stephenson. For questions, please contact Curt Deuser at curt_deuser@nps.gov or (702) 281-8120.

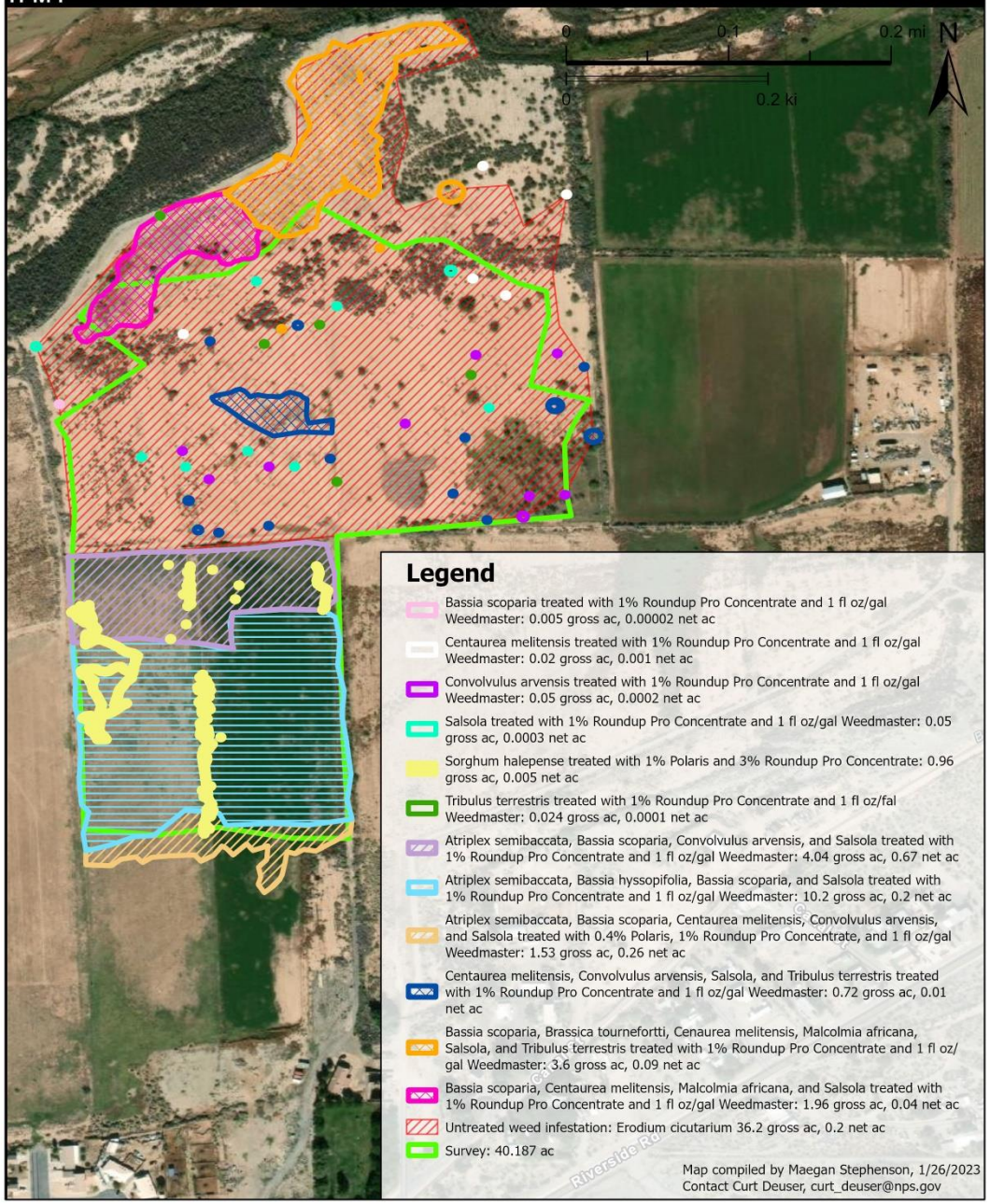
Virgin River Units near Mesquite



Virgin River Clark County: Bunkerville East
10/4/2022 and 10/12/2022 - 10/13/2022

IPMT

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



Legend

- Bassia scoparia treated with 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster: 0.005 gross ac, 0.00002 net ac
- Centaurea melitensis treated with 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster: 0.02 gross ac, 0.001 net ac
- Convolvulus arvensis treated with 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster: 0.05 gross ac, 0.0002 net ac
- Salsola treated with 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster: 0.05 gross ac, 0.0003 net ac
- Sorghum halepense treated with 1% Polaris and 3% Roundup Pro Concentrate: 0.96 gross ac, 0.005 net ac
- Tribulus terrestris treated with 1% Roundup Pro Concentrate and 1 fl oz/fal Weedmaster: 0.024 gross ac, 0.0001 net ac
- Atriplex semibaccata, Bassia scoparia, Convolvulus arvensis, and Salsola treated with 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster: 4.04 gross ac, 0.67 net ac
- Atriplex semibaccata, Bassia hyssopifolia, Bassia scoparia, and Salsola treated with 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster: 10.2 gross ac, 0.2 net ac
- Atriplex semibaccata, Bassia scoparia, Centaurea melitensis, Convolvulus arvensis, and Salsola treated with 0.4% Polaris, 1% Roundup Pro Concentrate, and 1 fl oz/gal Weedmaster: 1.53 gross ac, 0.26 net ac
- Centaurea melitensis, Convolvulus arvensis, Salsola, and Tribulus terrestris treated with 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster: 0.72 gross ac, 0.01 net ac
- Bassia scoparia, Brassica tournefortti, Cenaurea melitensis, Malcolmia africana, Salsola, and Tribulus terrestris treated with 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster: 3.6 gross ac, 0.09 net ac
- Bassia scoparia, Centaurea melitensis, Malcolmia africana, and Salsola treated with 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster: 1.96 gross ac, 0.04 net ac
- Untreated weed infestation: Erodium cicutarium 36.2 gross ac, 0.2 net ac
- Survey: 40.187 ac

Map compiled by Maegan Stephenson, 1/26/2023
Contact Curt Deuser, curt_deuser@nps.gov

Malta Starthistle
Centaura melitensis

IPMT
Invasive Plant
Management Team
Lake Mead

Invasive Plant Chemical Treatment Report

Partner: Clark County
Location: Bunkerville East
Date(s): 10/4/2022 and 10/12-14/2022
Treatment Method(s): Treating area with chemical mixture of 1% Roundup Pro Concentrate and 1 oz/gal Weedmaster via backpack sprayers.

Accomplishments

Species	Total Surveyed Acres	Gross Infested Acres Treated	Infested Acres	Treated Acres
Atriplex semibaccata Australian saltbush	40.187	14.24	0.07	0.07
Bassia hyssopifolia Five-hook bassia	40.187	10.2	0.05	0.05
Bassia scoparia Kochia	40.187	19.805	0.1	0.1
Brassica tournefortii Sahara mustard	40.187	3.6	0.02	0.02
Centaurea melitensis Malta starthistle	40.187	6.3	0.01	0.01
Convolvulus arvensis Field bindweed	40.187	4.81	0.02	0.02
Malcolmia africana African mustard	40.187	5.56	0.02	0.02
Salsola Russian thistle	40.187	20.57	0.69	0.69
Tribulus terrestris Puncturevine	40.187	4.34	0.02	0.02

Clark County: Bunkerville East
2/15-17/2023

IPMT

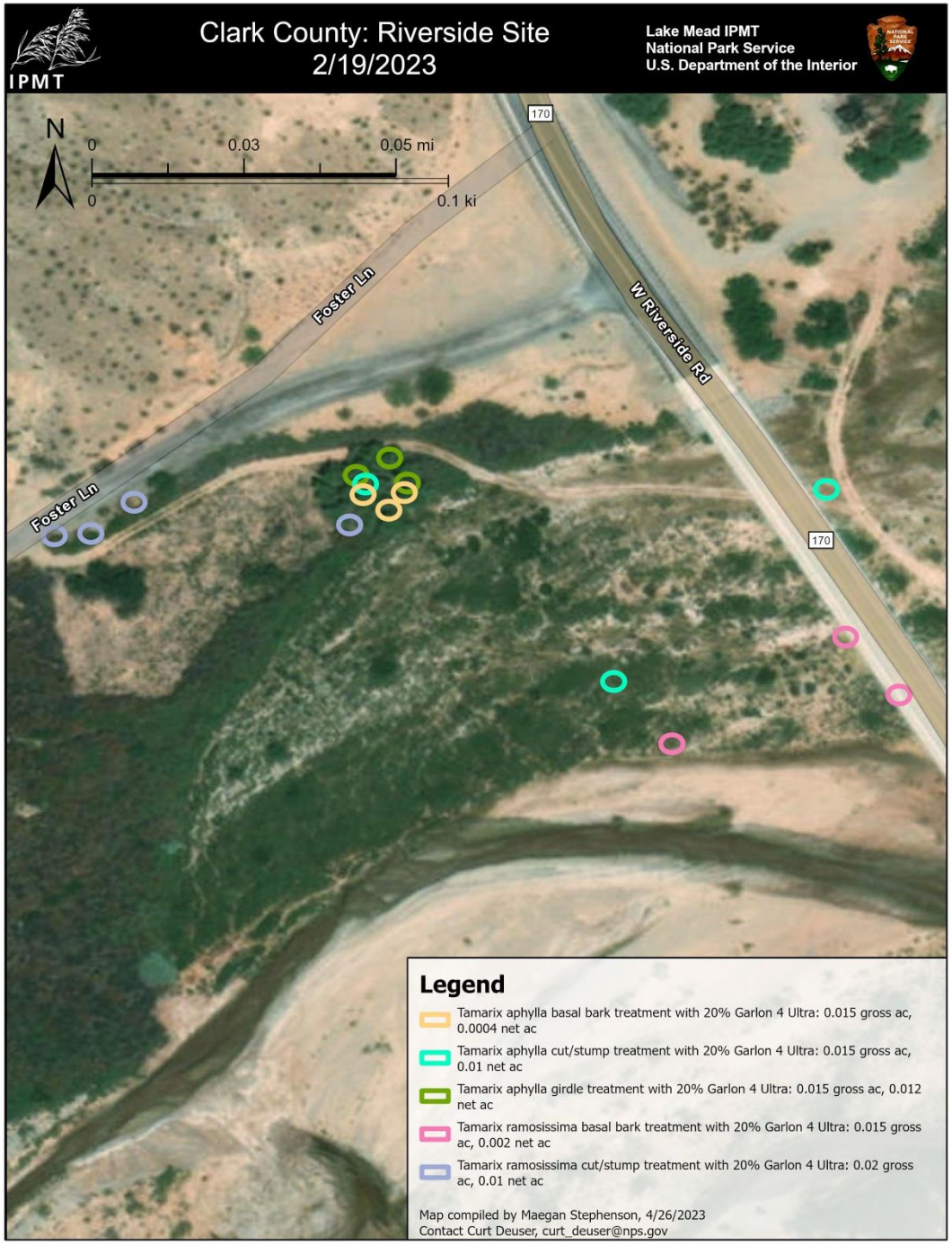
Lake Mead Invasive Plant Management Team
National Park Service
U.S. Department of the Interior

Legend

- Brassica tournefortii treated with 1% Roundup Pro Concentrate via tank: 2.51 gross ac, 1.57 net ac
- Brassica tournefortii treated with 1% Roundup Pro Concentrate via backpack: 1.06 gross ac, 0.16 net ac
- Brassica tournefortii and Sisymbrium altissimum treated with 1% Roundup Pro Concentrate via backpack: 18.1 gross ac, 0.81 net ac
- Survey: 32.09 ac

Map compiled by Maegan Stephenson, 4/26/2023
Contact Curt Deuser, curt_deuser@nps.gov

Tamarisk Resprouts After Mastication


IPMT
Clark County: Riverside Site
2/19/2023
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
N
0
0.03
0.05 mi
0
0.1 ki
Foster Ln
Foster Ln
W Riverside Rd
170
170
Legend
Tamarix aphylla basal bark treatment with 20% Garlon 4 Ultra: 0.015 gross ac, 0.0004 net ac
Tamarix aphylla cut/stump treatment with 20% Garlon 4 Ultra: 0.015 gross ac, 0.01 net ac
Tamarix aphylla girdle treatment with 20% Garlon 4 Ultra: 0.015 gross ac, 0.012 net ac
Tamarix ramosissima basal bark treatment with 20% Garlon 4 Ultra: 0.015 gross ac, 0.002 net ac
Tamarix ramosissima cut/stump treatment with 20% Garlon 4 Ultra: 0.02 gross ac, 0.01 net ac
Map compiled by Maegan Stephenson, 4/26/2023
Contact Curt Deuser, curt_deuser@nps.gov

Athel Trees at Riverside Bridge Unit

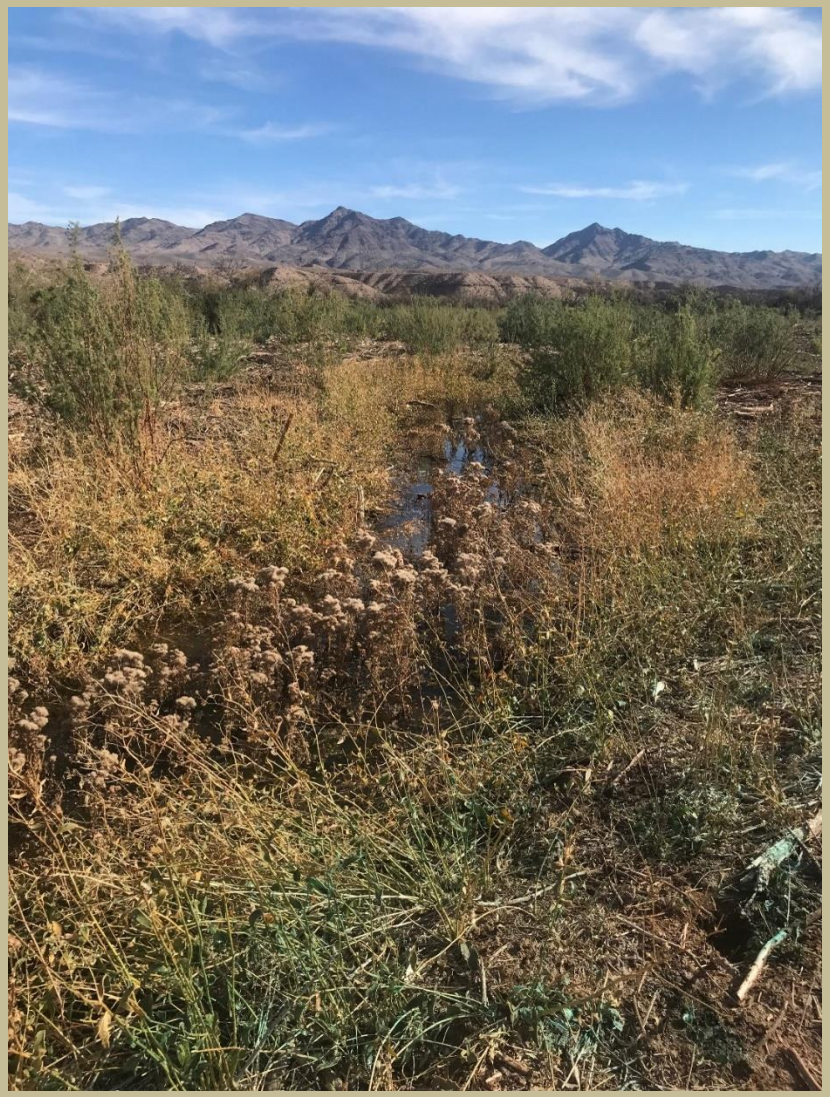
Tamarix aphylla

Tall Whitetop

Tall Whitetop/Perennial Pepperweed Mormon Mesa Unit

Good Restoration/Habitat

Mormon Mesa Post Tamarisk Mastication

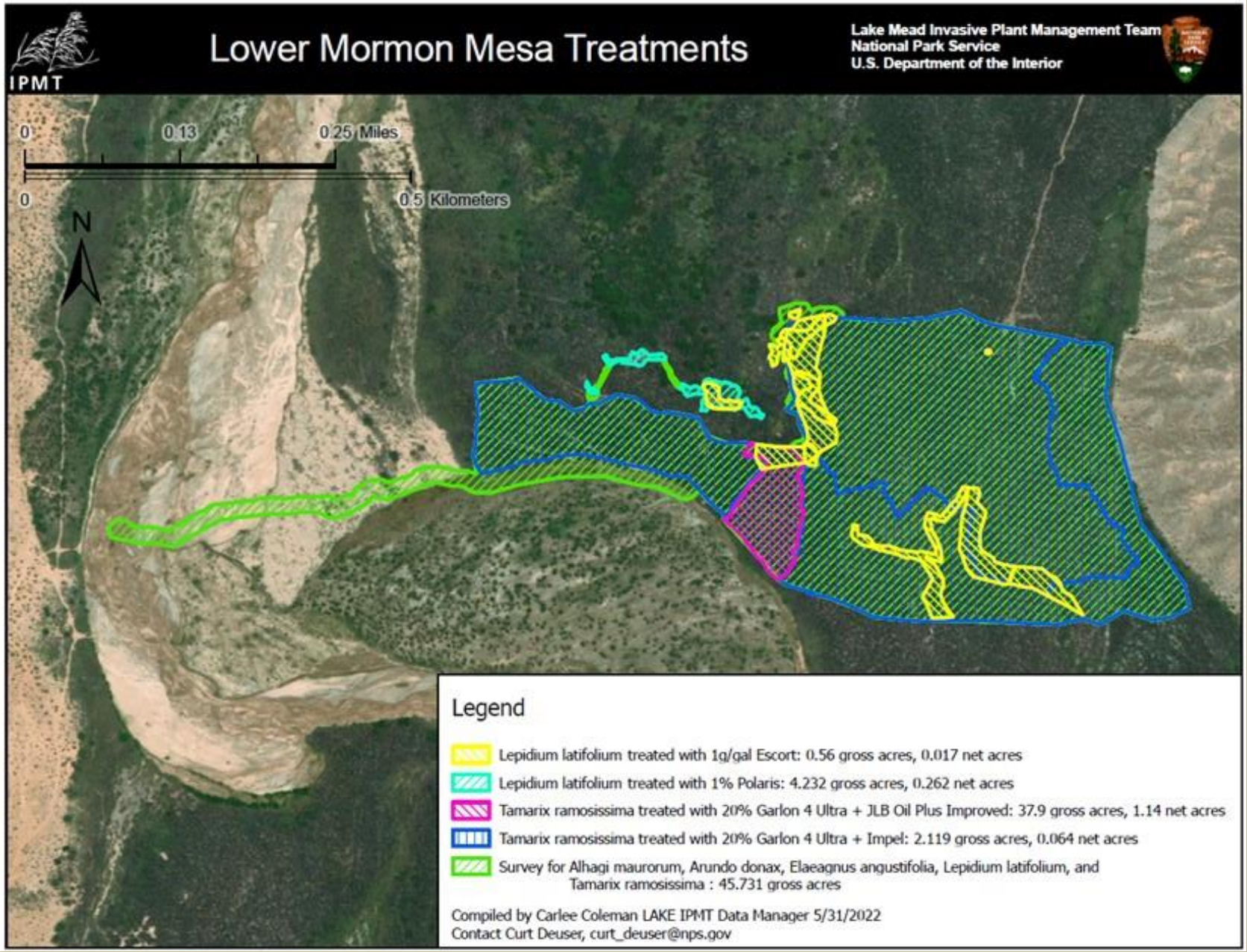


Cattle Impacts

Site Recovery (*Atriplex sp*)

Honey Mesquite Tree Recruitment

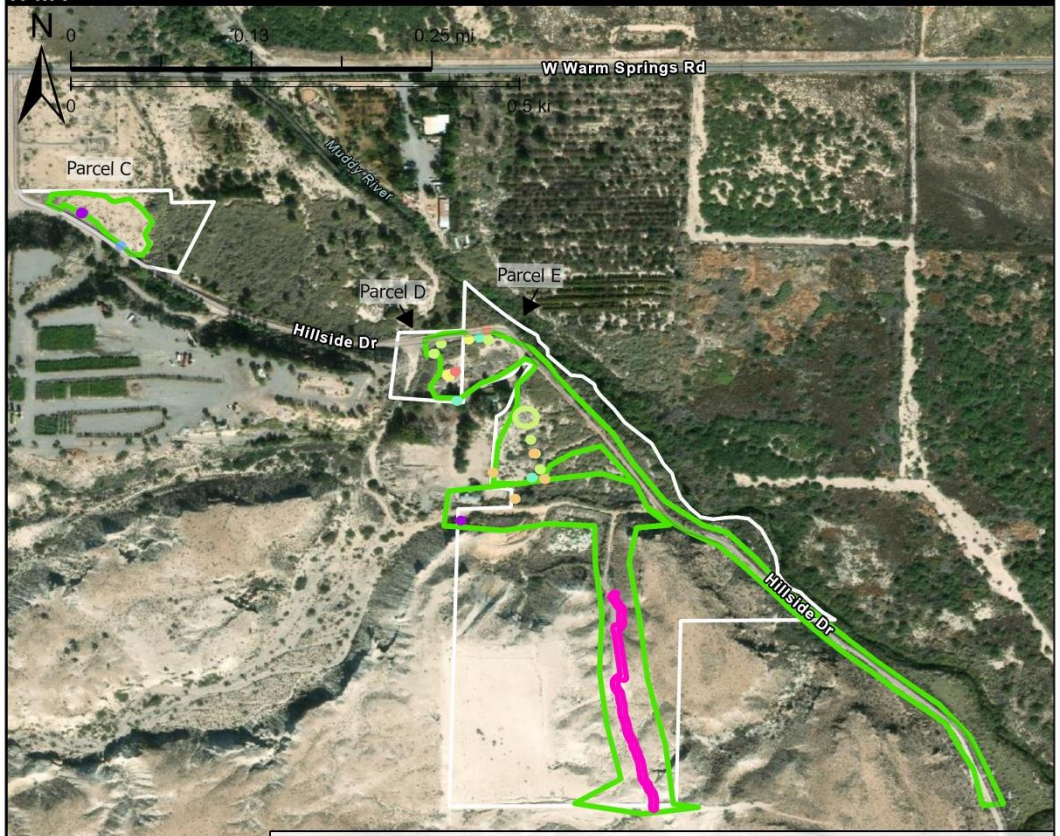
Camelthorn


IPMT
Lower Mormon Mesa Treatments
Lake Mead Invasive Plant Management Team
National Park Service
U.S. Department of the Interior
0
0.13
0.25 Miles
0
0.5 Kilometers
N
Legend
Lepidium latifolium treated with 1g/gal Escort: 0.56 gross acres, 0.017 net acres
Lepidium latifolium treated with 1% Polaris: 4.232 gross acres, 0.262 net acres
Tamarix ramosissima treated with 20% Garlon 4 Ultra + JLB Oil Plus Improved: 37.9 gross acres, 1.14 net acres
Tamarix ramosissima treated with 20% Garlon 4 Ultra + Impel: 2.119 gross acres, 0.064 net acres
Survey for Alhagi maurorum, Arundo donax, Elaeagnus angustifolia, Lepidium latifolium, and Tamarix ramosissima : 45.731 gross acres
Compiled by Carlee Coleman LAKE IPMT Data Manager 5/31/2022
Contact Curt Deuser, curt_deuser@nps.gov

Clark County: Muddy River Reserve
September 26 and 27, 2022, Map 1 of 2

IPMT

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



Legend

- Acroptilon repens treated with Roundup Pro Concentrate 1% and Weedmaster 1 fl oz/gal: 0.004 gross ac, 0.00002 net ac
- Bassia hyssopifolia treated with Roundup Pro Concentrate 1% and Weedmaster 1 fl oz/gal: 0.004 gross ac, 0.00002 net ac
- Bassia scoparia treated with Roundup Pro Concentrate 1% and Weedmaster 1 fl oz/gal: 0.019 gross ac, 0.0001 net ac
- Convolvulus arvensis treated with Roundup Pro Concentrate 1% and Weedmaster 1 fl oz/gal: 0.019 gross ac, 0.0003 net ac
- Salsola treated with Roundup Pro Concentrate 1% and Weedmaster 1 fl oz/gal: 0.101 gross ac, 0.0005 net ac
- Tribulus terrestris treated with Roundup Pro Concentrate 1% and Weedmaster 1 fl oz/gal: 0.004 gross ac, 0.00004 net ac
- Untreated weed infestation: Malcolmia africana 0.32 gross ac, 0.002 net untreated ac
- Untreated weed infestation: Bromus rubens and Salsola 0.005 gross ac, 0.002 net untreated ac
- Hand-pull and digging, Washingtonia filifera: 0.02 gross ac, 0.0001 net ac
- Survey: 11.2 ac
- Muddy River Boundary

Map compiled by Maegan Stephenson, 1/18/2023
Contact Curt Deuser, curt_deuser@nps.gov

IPMT
Invasive Plant
Management Team
Lake Mead

Invasive Plant Chemical Treatment Report

Partner: Clark County
Location: Muddy River Reserve
Date(s): September 26, 2022
Treatment Methods: Foliar spot with backpack.

Accomplishments

Species	Total Surveyed Acres	Gross Infested Acres Treated	Infested Acres	Treated Acres
Acroptilon repens Russian knapweed	27.5	0.005	0.00002	0.00002
Bassia hyssopifolia Five-hook bassia	27.5	0.005	0.00002	0.00002
Bassia scoparia Kochia	27.5	0.019	0.0001	0.0001
Convolvulus arvensis Field bindweed	27.5	0.019	0.0003	0.0003
Salsola Russian thistle	27.5	0.106	0.0006	0.0006
Tribulus terrestris Puncturevine	27.5	0.005	0.00005	0.00005

Herbicide Use

Herbicide	Amount	Mix Rate	Surfactant	Total Mix
Roundup Pro Concentrate	0.96 (fl oz)	1%	Activator 90	0.75 gallons
Weedmaster	0.75 (fl oz)	1 oz/gal		

IPMT
Invasive Plant
Management Team
Lake Mead

Invasive Plant Chemical Treatment Report

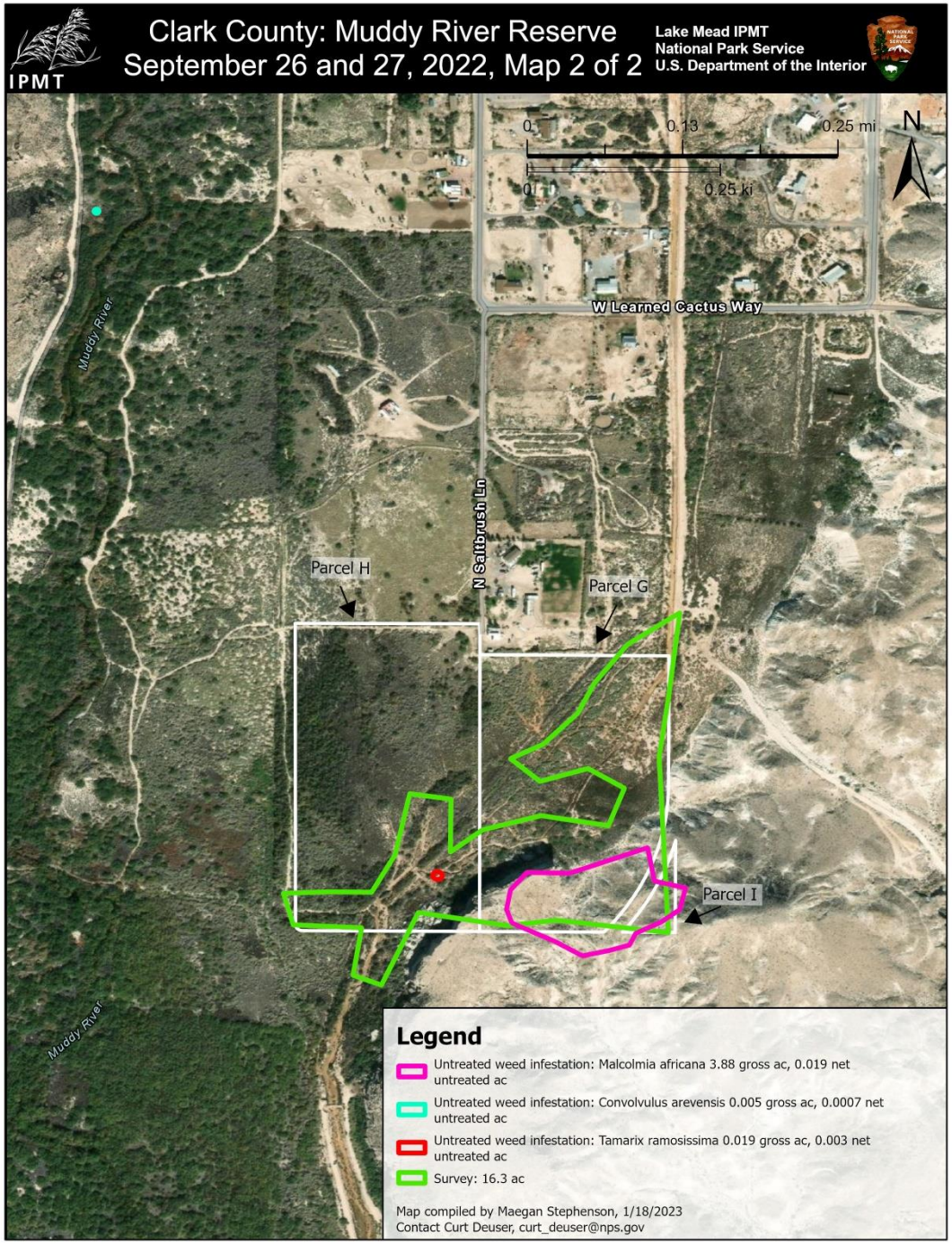
Partner: Clark County
Location: Muddy River Reserve, Parcels A and B
Date(s): 4/18 – 19/2023
Treatment Method(s): Chemical foliar spot treatment using 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster via backpack sprayers. Treatment in these two parcels was unable to be completed due to time constraints.

Accomplishments

Species	Total Surveyed Acres	Gross Infested Acres	Gross Infested Acres Treated	Infested Acres	Treated Acres
Brassica tournefortii Sahara mustard	3.04	0.86	0.62	0.004	0.003
Bromus rubens Red brome	3.04	0.62	0.62	0.013	0.013
Salsola Russian thistle	3.04	0.79	0.62	0.008	0.003
Sisymbrium irio London rocket	3.04	0.95	0.62	0.005	0.003
Tribulus terrestris Puncturevine	3.04	0.63	0.62	0.00302	0.00300

Herbicide Use

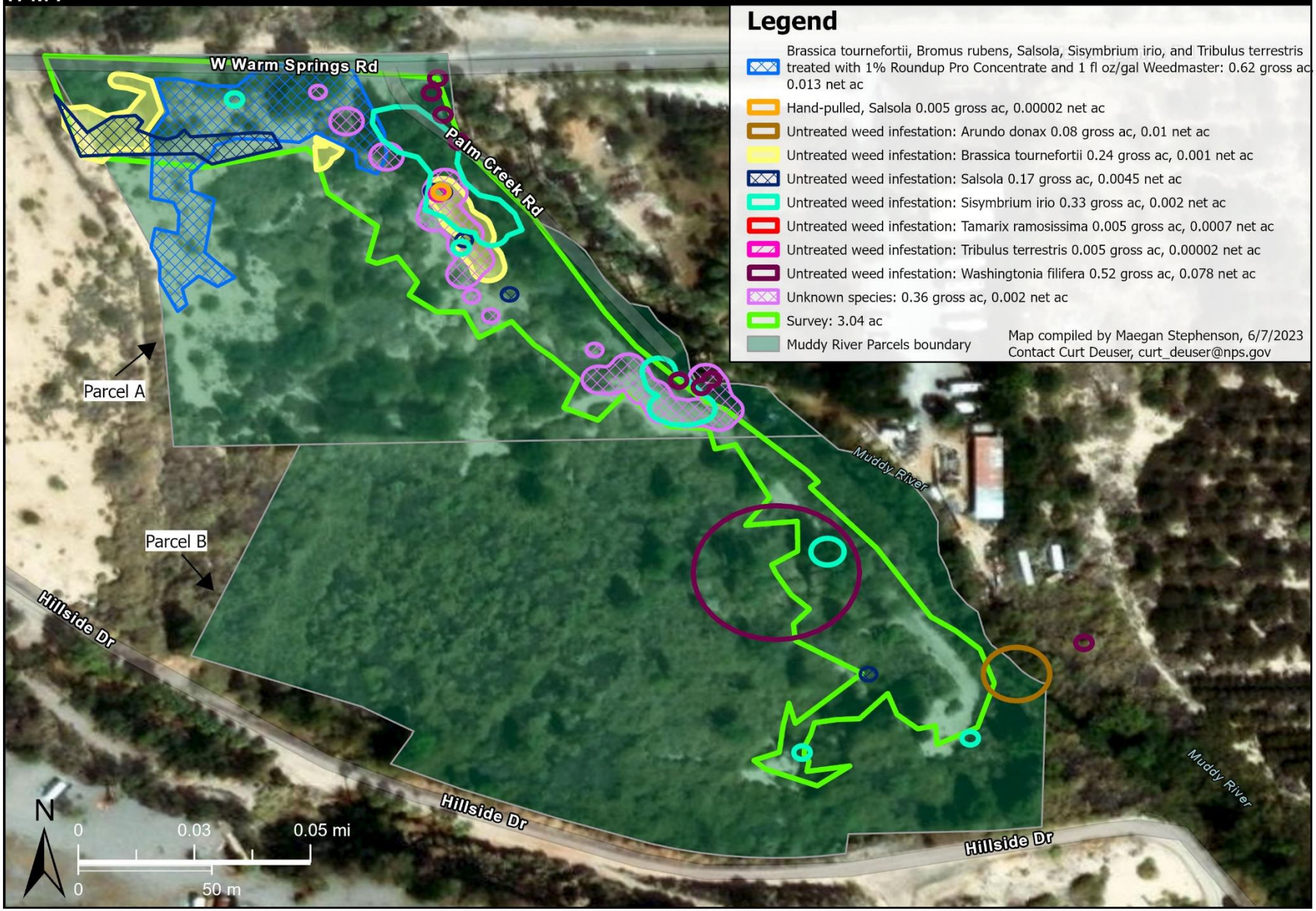
Herbicide	Amount	Mix Rate	Surfactant	Total Mix
Roundup Pro Concentrate	6.4 fl oz	1%	Target Pro	5 gallons
Weedmaster	5 fl oz	1 fl oz/gal		


IPMT
Clark County: Muddy River Reserve
September 26 and 27, 2022, Map 2 of 2
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
0
0.13
0.25 mi
0
0.25 ki
N
W Learned Cactus Way
Muddy River
N Saltbrush Ln
Parcel H
Parcel G
Parcel I
Muddy River
Legend
Untreated weed infestation: Malcolmia africana 3.88 gross ac, 0.019 net untreated ac
Untreated weed infestation: Convolvulus arevensis 0.005 gross ac, 0.0007 net untreated ac
Untreated weed infestation: Tamarix ramosissima 0.019 gross ac, 0.003 net untreated ac
Survey: 16.3 ac
Map compiled by Maegan Stephenson, 1/18/2023
Contact Curt Deuser, curt_deuser@nps.gov

Clark County: Muddy River Reserve
4/18 - 19/2023

IPMT

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



Riparian Units Future Work

- Survey Mormon Mesa South
- More Survey in Mesquite Unit
- Follow up tamarisk control at Muddy River G/H
- Palm Tree control at Muddy River Unit A
- Re-treat maintain previous treatment areas
- Tall Whitetop monitoring and retreatments
- Camelthorn monitoring and treatments
- Continue Bunkerville East/West tamarisk control
- Additional revegetation? Bunkerville West/Muddy River Unit F

Boulder City Conservation Easement Weed Survey
MSHCP Annual Project Review 2023
Project 2021-NPS-2005D

Project Overview

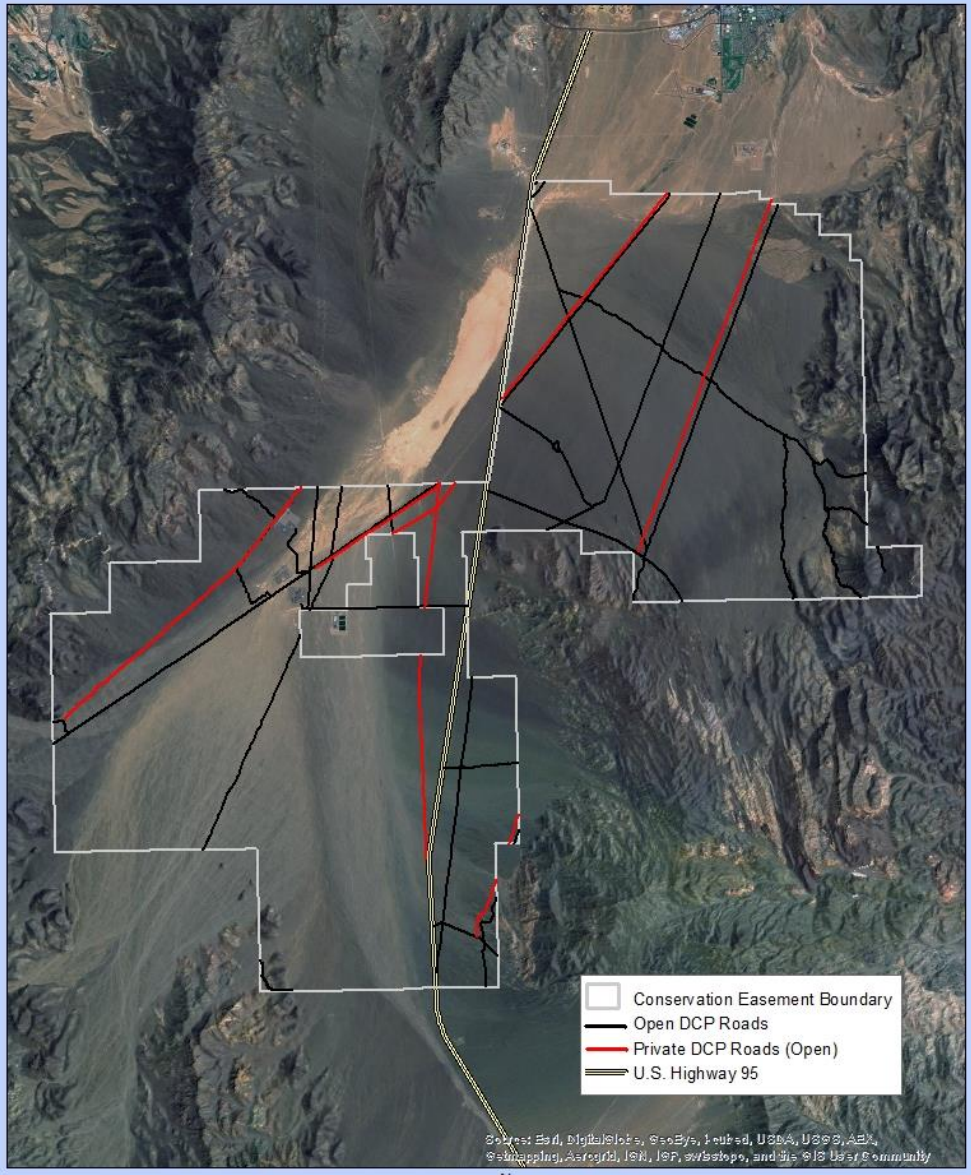
- Inter-local Agreement between Clark County and NPS December 2021 to December 2023 (close out)
- Conduct surveys of routes within the BCCE to detect non-native (exotic) invasive vegetation/weeds
- Conduct targeted weed treatments
- Note native plants observed
- Up to 95 miles of roads, 10 meters on 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

Boulder City Conservation Easement



Lake Mead Exotic Plant Management Team, Feb. 2014

N

0 0.75 1.5 3 4.5 6
Miles

GPS Mapping

Roadside Weed Control

Native Big Galleta Grass

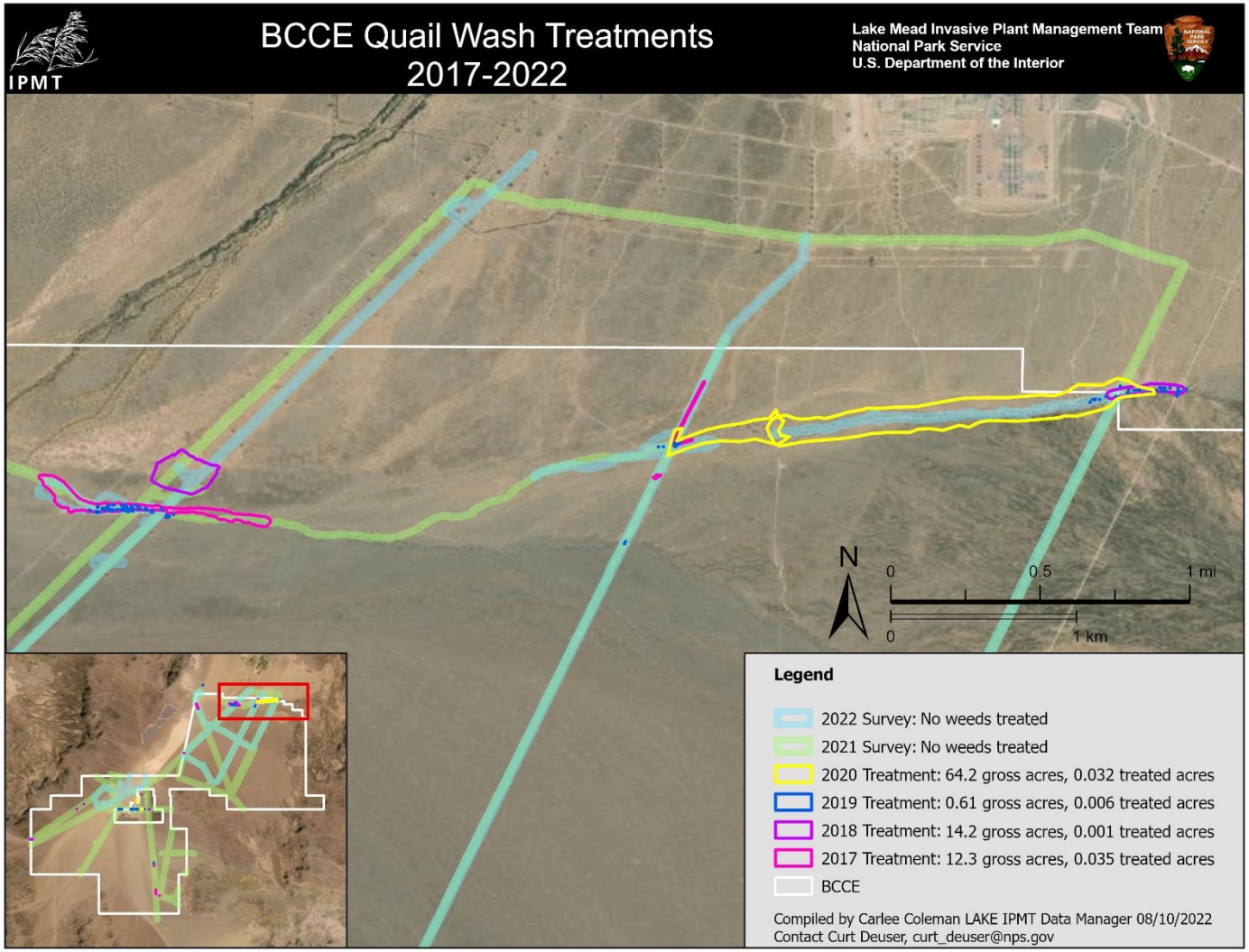
Pleuraphis rigida

Native Dune primrose
Oenothera deltoides var. *deltoides*

Tamarisk Leaf Beetle

Sahara Mustard
Brassica tournefortii

Northern Section Weed Threat



IPMT
Invasive Plant
Management Team
Lake Mead

Invasive Plant Chemical Treatment Report

Partner: Clark County
Location: Boulder City Conservation Easement
Date(s): February and March 2023
Treatment Method(s): Chemical foliar spot treatment using 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster via backpack sprayers.

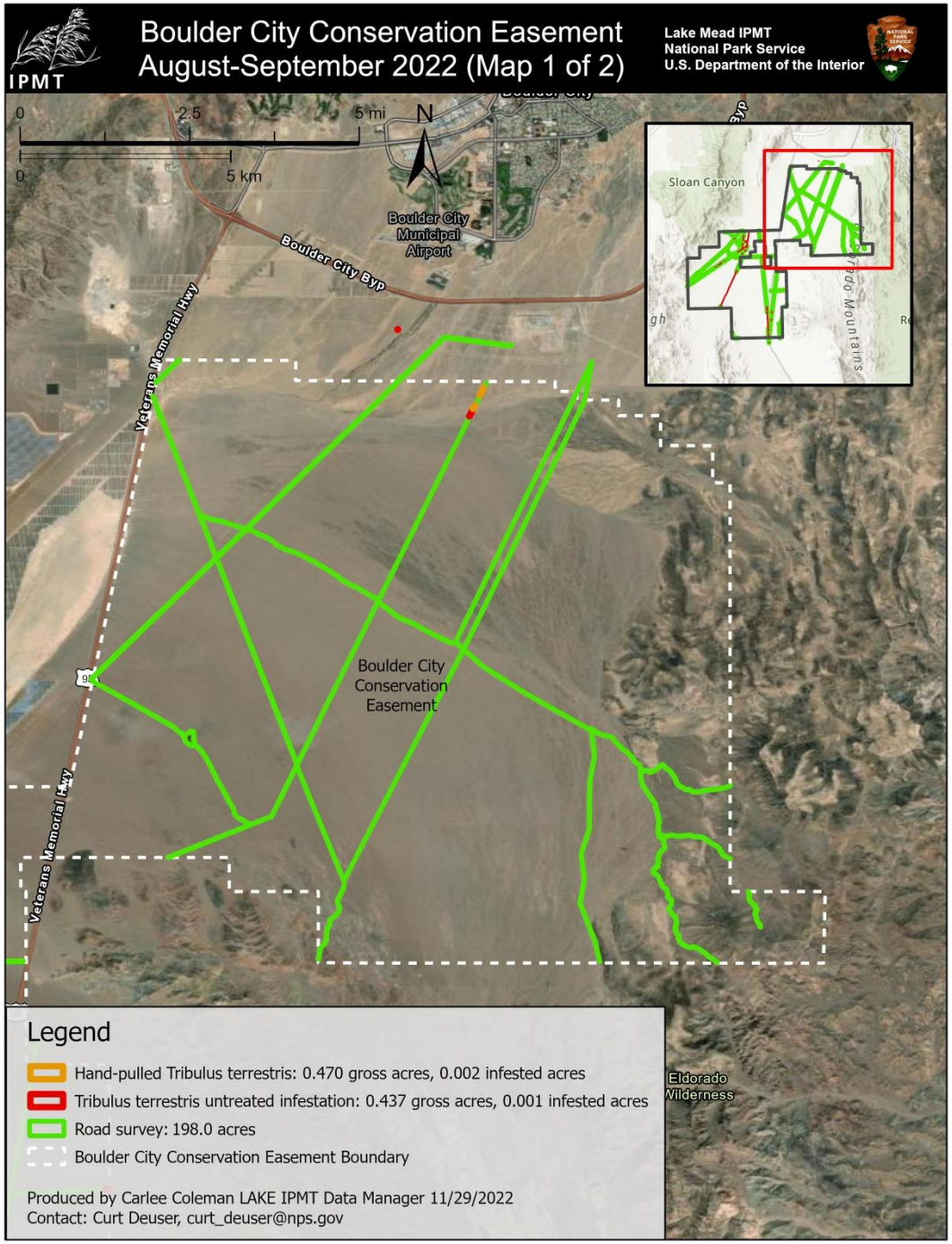
Accomplishments

Species	Total Surveyed Acres	Gross Infested Acres Treated	Infested Acres	Treated Acres
Brassica tournefortii Sahara mustard	333.9	0.96	0.0048	0.0048

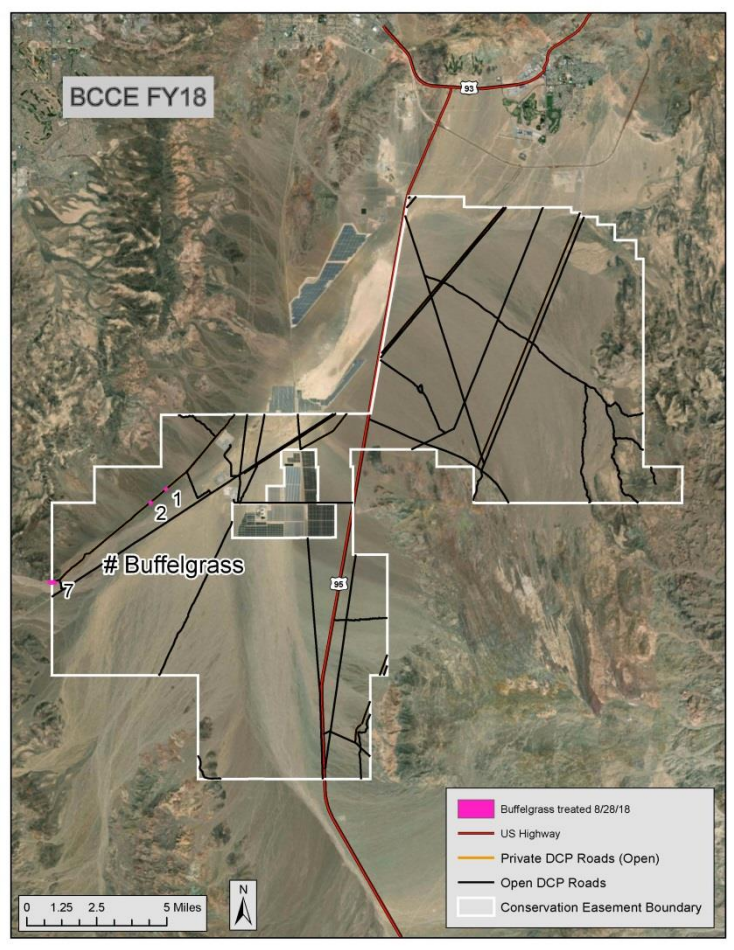
Herbicide Use

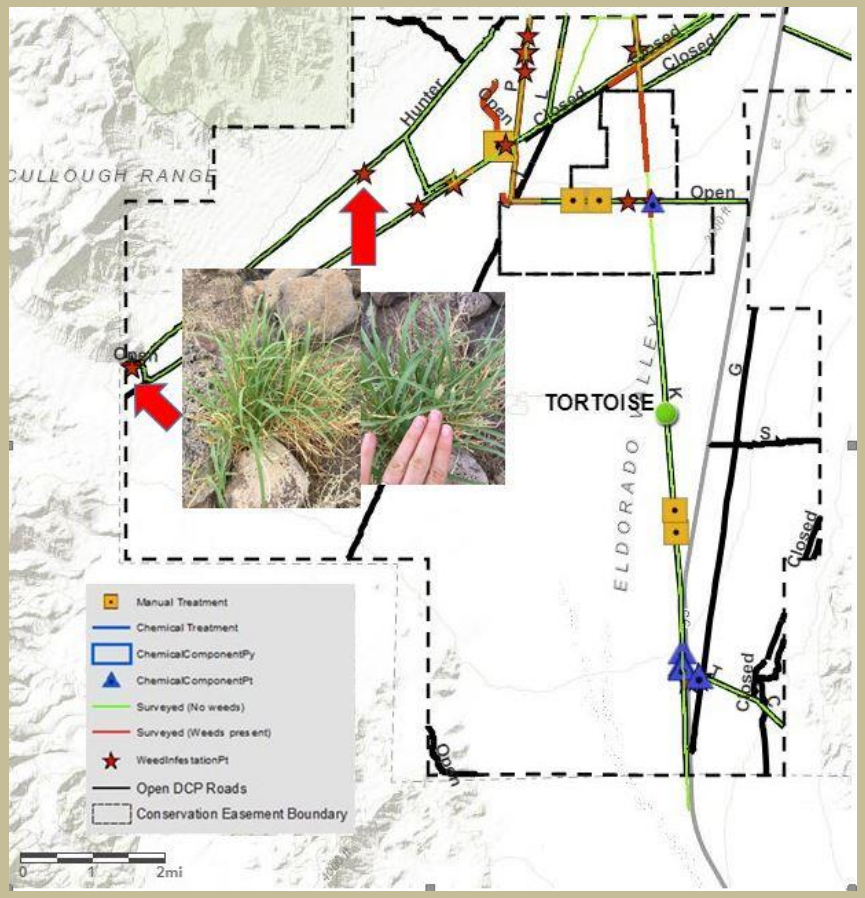
Herbicide	Amount	Mix Rate	Surfactant	Total Mix
Roundup Pro Concentrate	2.56 fl oz	1%	Target Pro Activator Spreader	2 gallons
Weedmaster	2 fl oz	1 fl oz/gal		

These definitions are based on the 2019 NISIMS Fields and Domains guide. Please refer to https://irma.nps.gov/DataStore/DownloadFile/617128 for more information. These definitions can also be found on the back of this report. Compiled by Maegan Stephenson. For questions, please contact Curt Deuser at curt_deuser@nps.gov or (702) 281-8120.


IPMT
Boulder City Conservation Easement
August-September 2022 (Map 1 of 2)
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
0
2.5
5 mi
0
5 km
N
Boulder City Municipal Airport
Boulder City Byp
Veterans Memorial Hwy
Sloan Canyon
Boulder City Conservation Easement
Eldorado Wilderness
Legend
Hand-pulled Tribulus terrestris: 0.470 gross acres, 0.002 infested acres
Tribulus terrestris untreated infestation: 0.437 gross acres, 0.001 infested acres
Road survey: 198.0 acres
Boulder City Conservation Easement Boundary
Produced by Carlee Coleman LAKE IPMT Data Manager 11/29/2022
Contact: Curt Deuser, curt_deuser@nps.gov

Buffel Grass Detection and Treatments





Buffel Grass Treatment
Cenchrus cilare / Pennisetum cilare

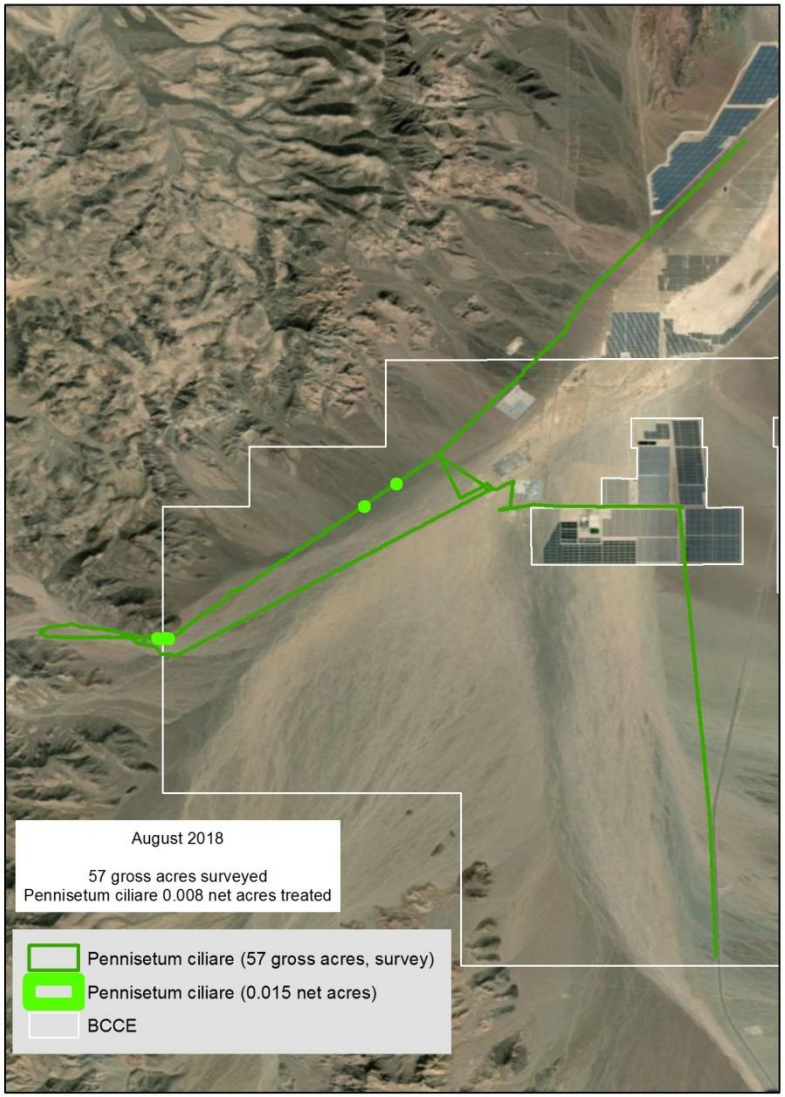
Buffel Grass Control

Before treatment August 2018

After treatment Aug 2019

LAKE MEAD
NATIONAL PARK SERVICE
EPMT

Boulder City Conservation Easement
2018 - 2019 Lake Mead EPMT Accomplishments



N
0 0.75 1.5 3 Miles

Compiled by Rachel Skoza 8/27/2019
Contact Curt Deuser curt_deuser@nps.gov

Invasive Plant Survey and Treatment Report

Partner:	Clark County Desert Conservation Program
Location:	Boulder City Conservation Easement
Dates:	August and September 2022
Survey method:	Ocular survey from vehicle or on foot

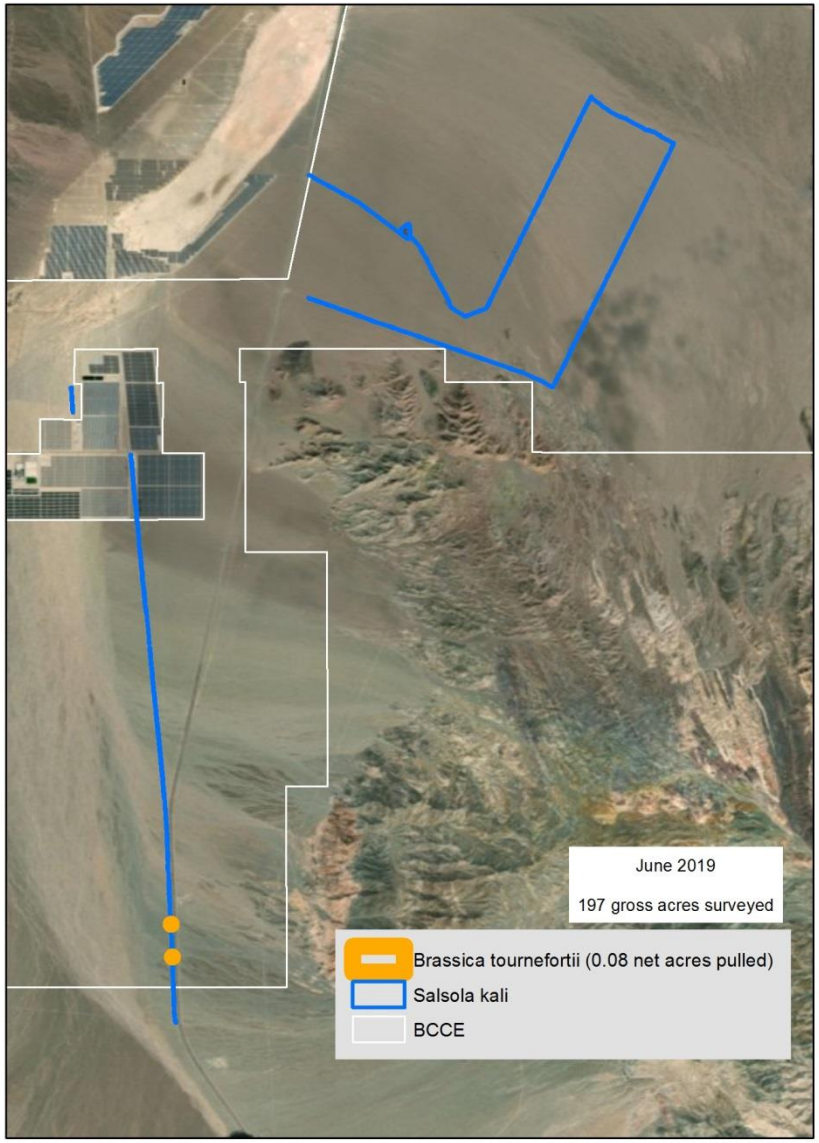
Accomplishments

Species	Total Surveyed Acres	Gross Infested Acres	Net Infested Acres	Gross Treated Acres	Net Treated Acres
Brassica tournefortii Sahara mustard	463.8	None found	None found	None found	None found
Pennisetum ciliare Buffelgrass	463.8	None found	None found	None found	None found
Salsola spp. Russian thistle	463.8	None found	None found	None found	None found
Tribulus terrestris Puncturevine	463.8	185.7	1.611	145.9	0.73

These definitions are based on the 2019 NISIMS Fields and Domains guide. Please refer to https://irma.nps.gov/DataStore/DownloadFile/617128 for more information. These definitions can also be found on the back of this report. Produced by Carlee Coleman, LAKE IPMT Data Manager. For questions, please contact Curt Deuser at curt_deuser@nps.gov or (702) 281-8120.

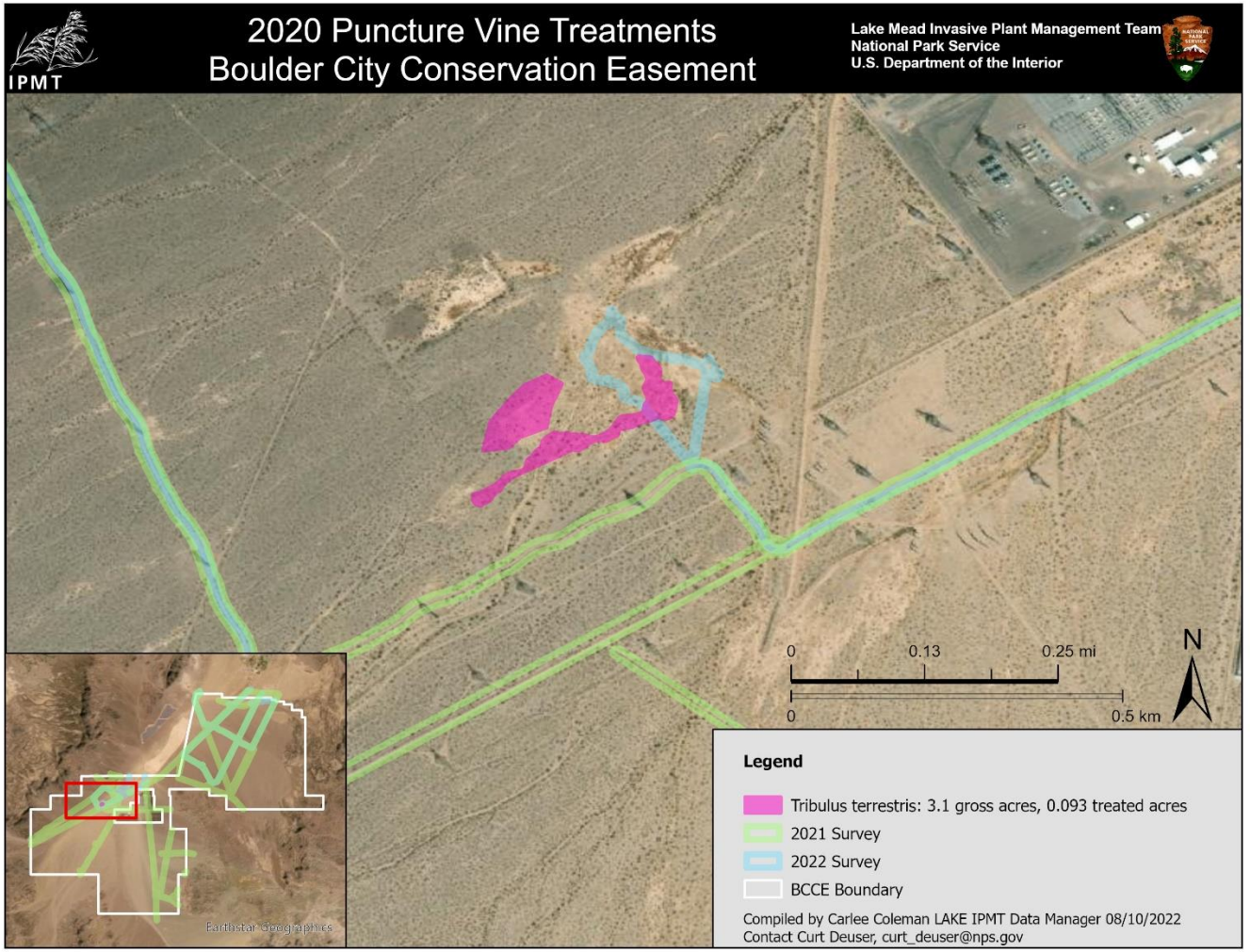
LAKE MEAD
NATIONAL PARK SERVICE
EPMT

Boulder City Conservation Easement
2018 - 2019 Lake Mead EPMT Accomplishments



Compiled by Rachel Skoza 8/27/2019
Contact Curt Deuser curt_deuser@nps.gov

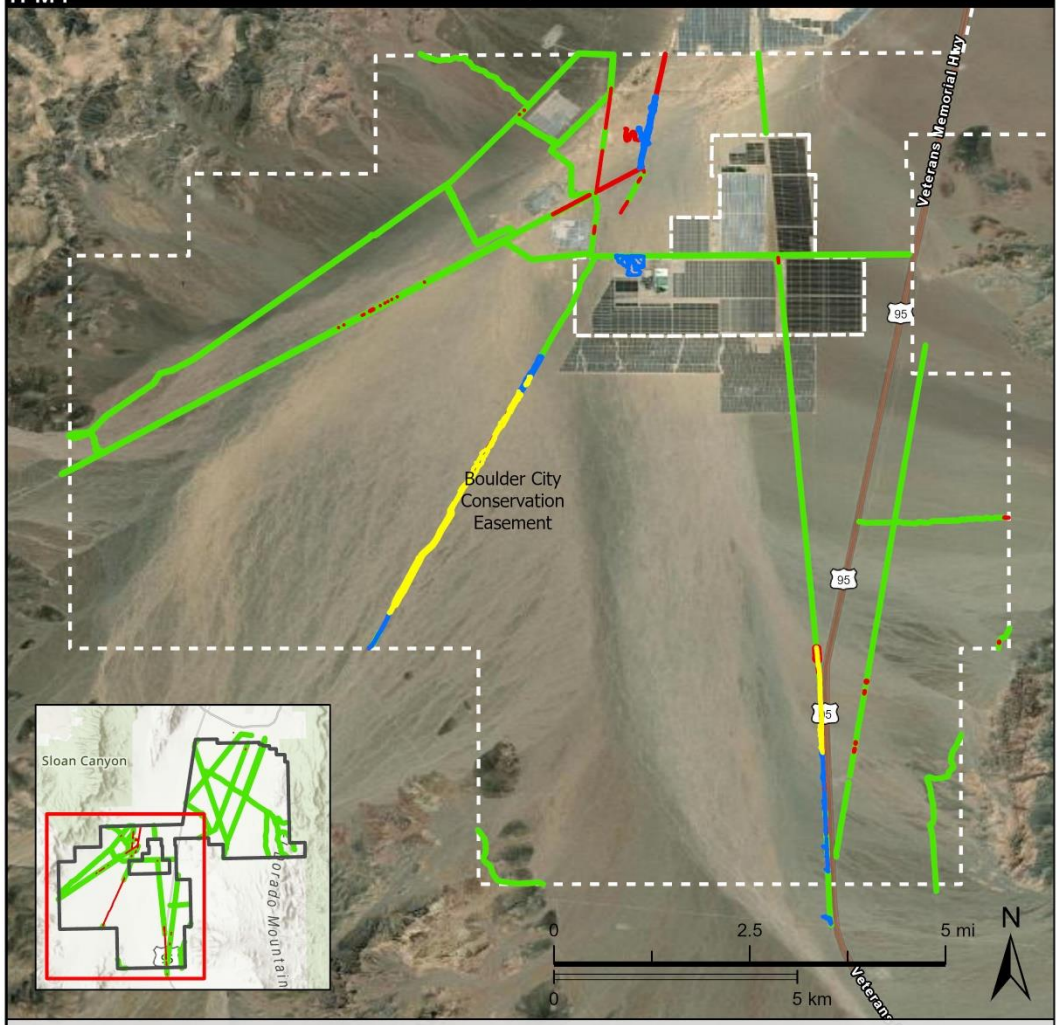
Southern Unit Weed threat“Hot Spot”



Boulder City Conservation Easement
August-September 2022 (Map 2 of 2)

IPMT

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



Legend

- Tribulus terrestris treated with Killzall 1% + 1 fl oz/gal Weedmaster: 69.6 gross acres, 1.16 treated acres
- Tribulus terrestris treated with Roundup Pro Concentrate 1% + 1 fl oz/gal Weedmaster: 76.3 gross acres, 1.16 treated acres
- Tribulus terrestris untreated infestation: 39.363 gross acres, 0.88 infested acres
- Road survey: 265.8 acres
- Boulder City Conservation Easement Boundary

Produced by Carlee Coleman LAKE IPMT Data Manager 11/29/2022
Contact: Curt Deuser, curt_deuser@nps.gov

Puncture Vine

IPMT
Invasive Plant
Management Team
Lake Mead

Invasive Plant Treatment Report

Partner: Clark County Desert Conservation Program
Location: Boulder City Conservation Easement
Dates: 09/07-08/22, 09/13-15/22, 09/19-21/22
Treatment Method: Foliar spot spray with backpack

Accomplishments

Species	Total Surveyed Acres	Infested Acres	Gross Infested Acres Treated	Treated Acres
Tribulus terrestris Puncturevine	69.6	0.35	69.6	0.35

Herbicide Use

Herbicide	Amount	Mix Rate	Surfactant	Total Mix
Killzall II	139.52 fl oz	1%	0.5% Activator 90 or 0.5% Target Pro Spreader	109 gal
Weedmaster	109 fl oz	1 fl oz/gal		

Note: N/A.

These definitions are based on the 2019 NISIMS Fields and Domains guide. Please refer to https://irma.nps.gov/DataStore/DownloadFile/617128 for more information. These definitions can also be found on the back of this report. Produced by Carlee Coleman, LAKE IPMT Data Manager. For questions, please contact Curt Deuser at curt_deuser@nps.gov or (702) 281-8120.

Invasive Plant Treatment Report

Partner:	Clark County Desert Conservation Program
Location:	Boulder City Conservation Easement
Dates:	08/24/22, 08/29-09/01/22, 09/06-07/22, 09/22/22, 09/28-29/22
Treatment Method:	Foliar spot spray with backpack

Accomplishments

Species	Total Surveyed Acres	Infested Acres	Gross Infested Acres Treated	Treated Acres
Tribulus terrestris Puncturevine	76.3	0.38	76.3	0.38

Herbicide Use

Herbicide	Amount	Mix Rate	Surfactant	Total Mix
Roundup Pro Concentrate	184.64 fl oz	1%	0.5% Activator 90 or 0.5% Target Pro Spreader	144.25 gal
Weedmaster	144.25 fl oz	1 fl oz/gal		

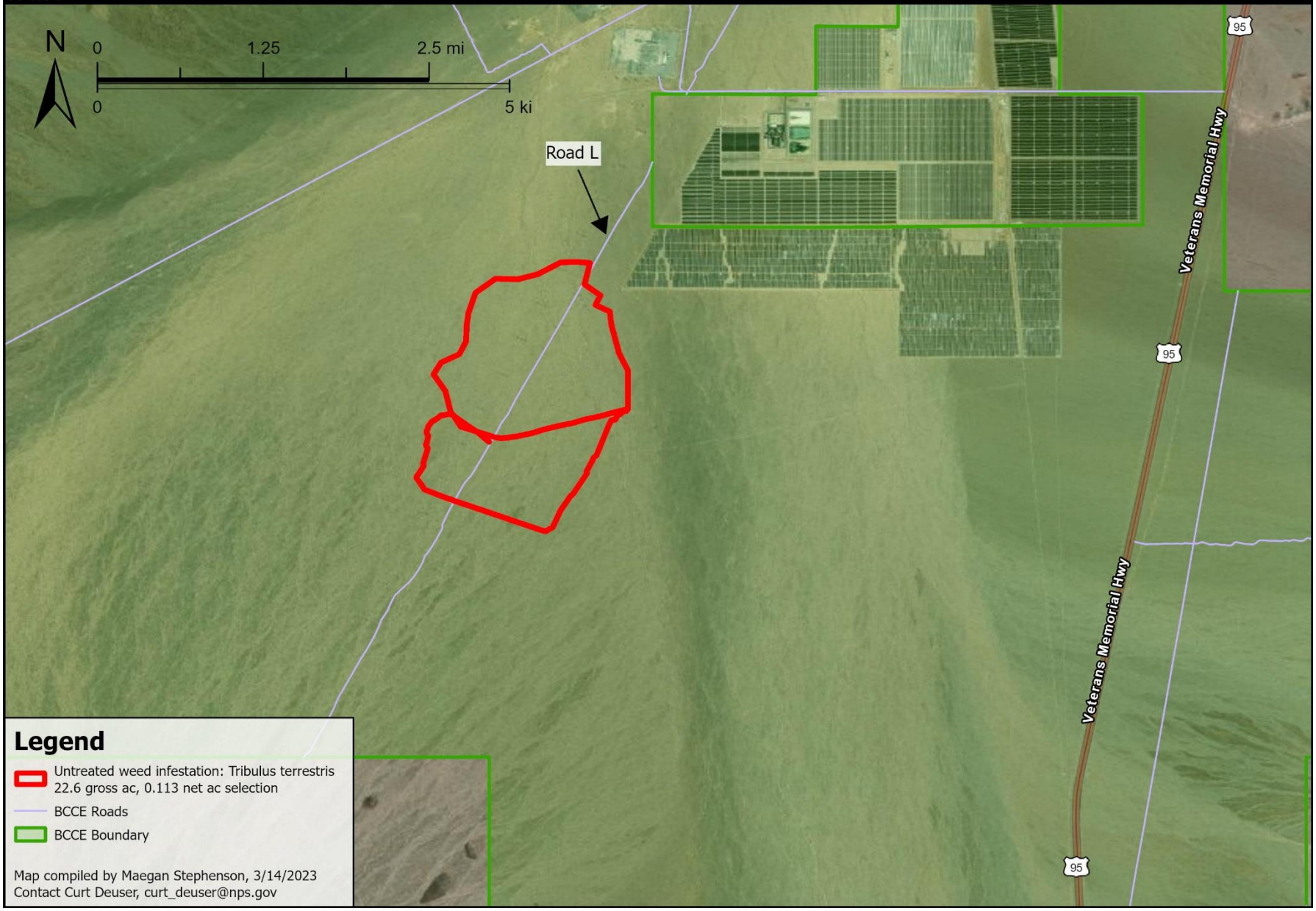
Note: N/A.

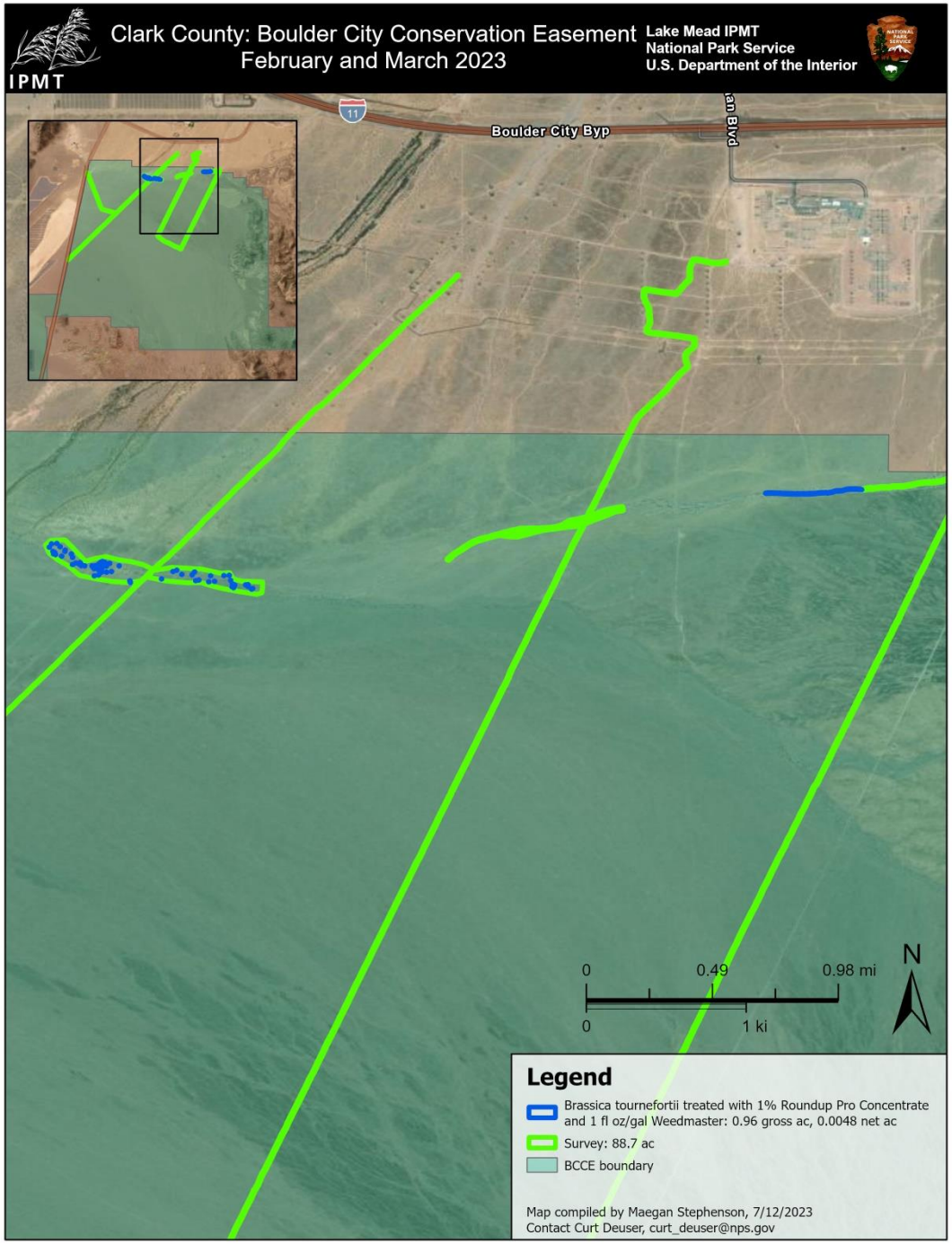
These definitions are based on the 2019 NISIMS Fields and Domains guide. Please refer to https://irma.nps.gov/DataStore/DownloadFile/617128 for more information. These definitions can also be found on the back of this report. Produced by Carlee Coleman, LAKE IPMT Data Manager. For questions, please contact Curt Deuser at curt_deuser@nps.gov or (702) 281-8120.

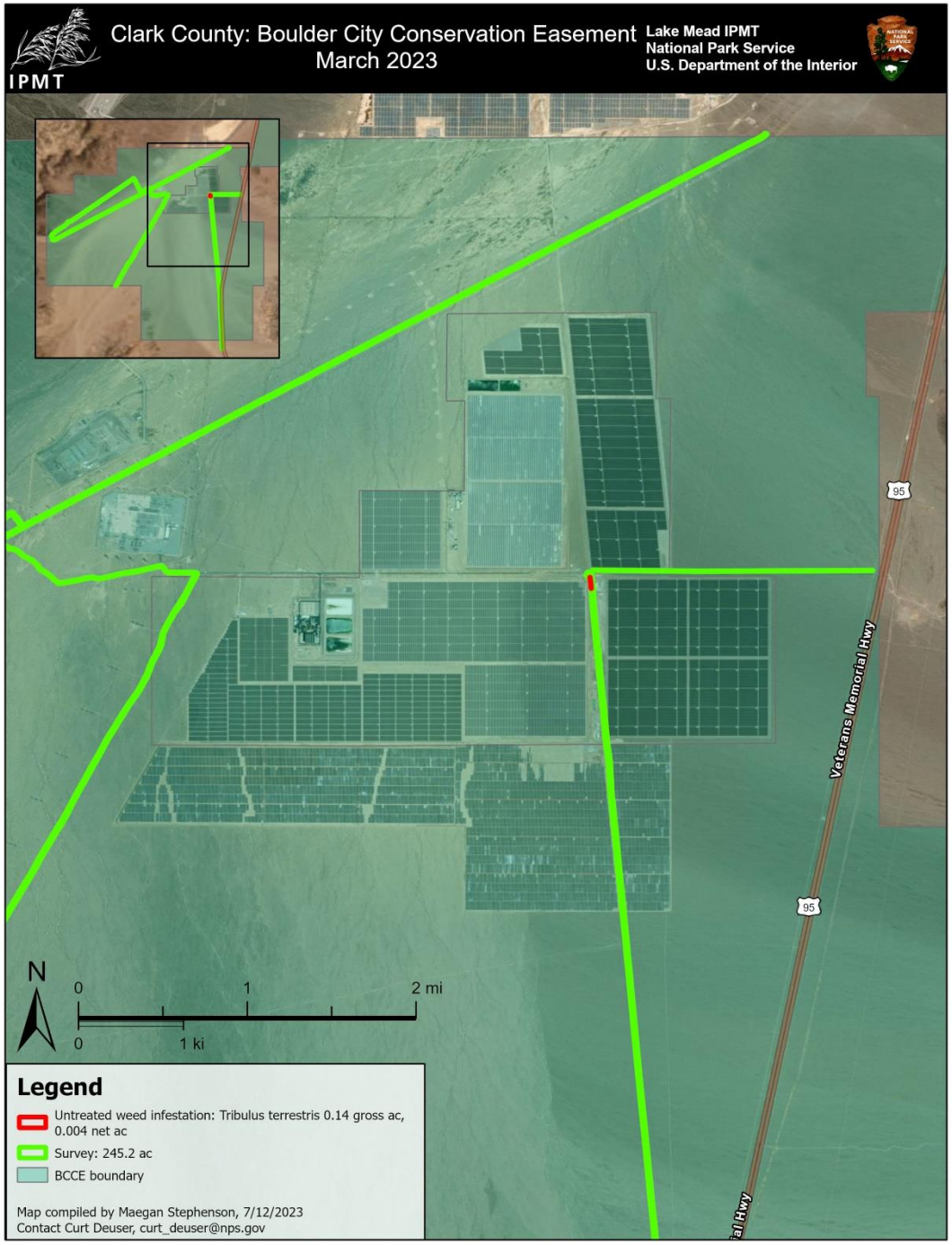
Boulder City Conservation Easement
10/26/2022 and 11/15/2022

IPMT

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




IPMT
Clark County: Boulder City Conservation Easement
February and March 2023
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
11
Boulder City Byp
Buchanan Blvd
0
0.49
0.98 mi
0
1 ki
N
Legend
Brassica tournefortii treated with 1% Roundup Pro Concentrate and 1 fl oz/gal Weedmaster: 0.96 gross ac, 0.0048 net ac
Survey: 88.7 ac
BCCE boundary
Map compiled by Maegan Stephenson, 7/12/2023
Contact Curt Deuser, curt_deuser@nps.gov


IPMT
Clark County: Boulder City Conservation Easement
March 2023
Lake Mead IPMT
National Park Service
U.S. Department of the Interior
95
Veterans Memorial Hwy
95
N
0
1
2 mi
0
1 ki
Legend
Untreated weed infestation: Tribulus terrestris 0.14 gross ac, 0.004 net ac
Survey: 245.2 ac
BCCE boundary
Map compiled by Maegan Stephenson, 7/12/2023
Contact Curt Deuser, curt_deuser@nps.gov

Near Future Work

- 2023 late summer surveys
- Continue survey intensely over the next few weeks from recent August rains
- Focus on previous buffel grass and puncture vine areas/warm season species
- November/December 2023 annual report and project close out
- New agreement?

Acknowledgements

- *This work was supported by the Clark County Desert Conservation Program and funded by Section 10, to further implement or develop the Clark County Multiple Species Habitat Conservation Plan*
- Caryn Wright, Stefanie Ferrazzano, Sara Carrizal Clark County Dept of Air Quality/Desert Conservation Program
- NPS IPMT Staff: Corbin Gentzler, James Roberts, Grady Workman, Maegan Stephenson, Tyler Jack, Jacob Pope, Tony Garcia, Riley Gronemeyer, Caleb Dankle, Josh Vogel, Matt Gorentz, Joe Ingram, Abbie Zastawny, Carlee Coleman and others