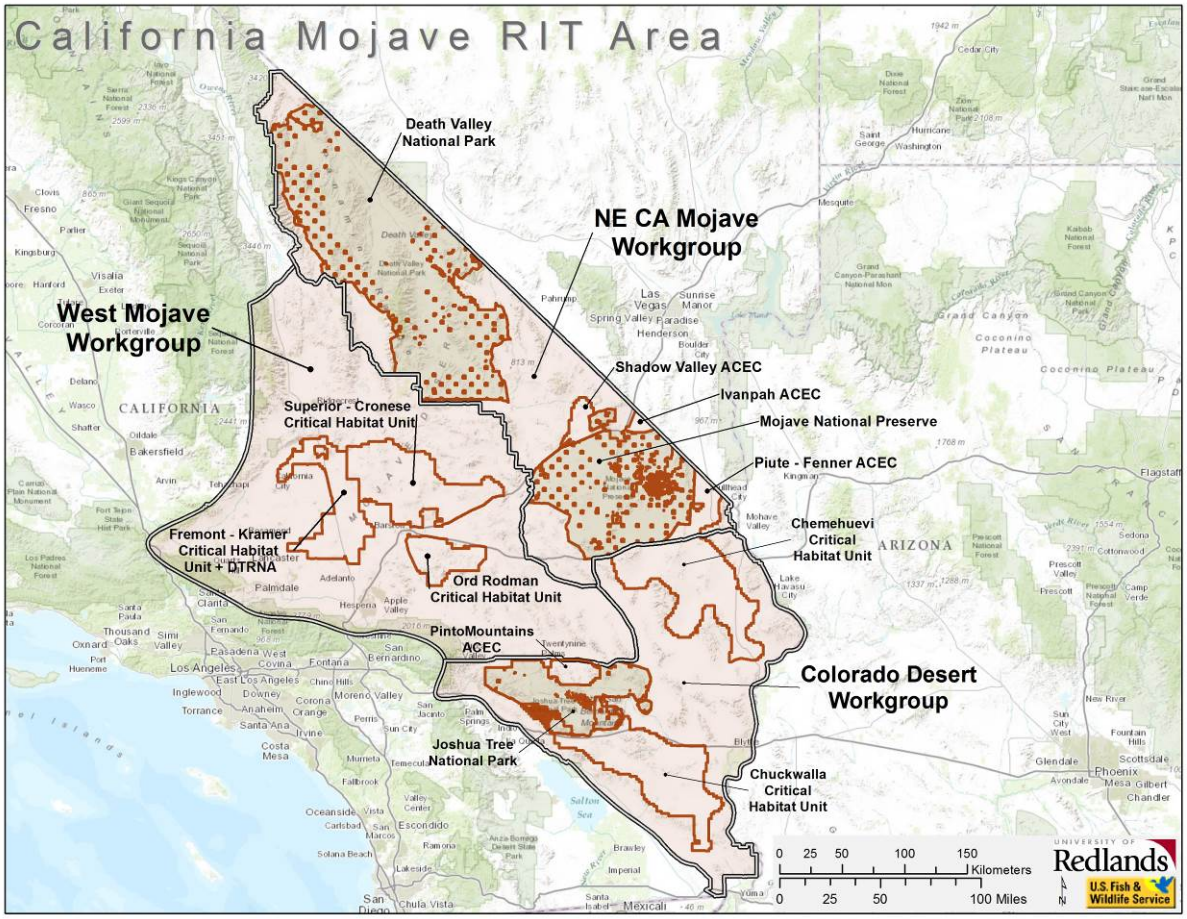
RECOVERY ACTION PLAN

FOR THE

MOJAVE DESERT TORTOISE IN CALIFORNIA



April 2014
Version 1

WHAT IS THIS DOCUMENT?

This document is the recovery action plan developed by the California Mojave Recovery Implementation Team (RIT) for their region. The foundation for desert tortoise recovery is the revised recovery plan for the Mojave desert tortoise (USFWS 2011. Revised Recovery Plan for the Mojave population of the desert tortoise, *Gopherus agassizii.* Sacramento, CA), which describes threats to the Mojave desert tortoise and recovery actions to remove these threats. Due to the numerous and diverse threats that vary spatially and temporally across the range of the tortoise, the revised recovery plan recommends an adaptive management framework for prioritizing recovery actions. The first step in this framework was to capture and rank the threats and recovery actions with development of a spatial decision support system (SDSS). The desert tortoise SDSS ranks categories or types of recovery actions that are expected to be most effective in each part of the desert for long-term recovery of the species based on models of relationships between threats, recovery actions, and tortoise populations. The next step in the adaptive management framework was for regional RITs to tier off the recovery plan and the ranked recovery action types from the SDSS by developing recovery action plans containing specific, local prescriptions for recovery actions and suggesting the first set of activities to be pursued during the initial years of the recovery process. In conjunction with prioritizing recovery actions in this document, the RITs prioritized needs for effectiveness monitoring or research. This document is the first recovery action plan for the California Mojave RIT.

Disclaimer: The Desert Tortoise Management Oversight Group (MOG) approves this Recovery Action Plan (version 1) as part of an ongoing process toward recovery of the Mojave desert tortoise. This approval does not imply endorsement of specific recommendations within the plan by all members of the MOG. The recovery action plan is intended to be a living document that serves as a tool to facilitate on-the-ground implementation of recovery actions. Nothing obligates actions to be implemented by agencies or that alternative actions cannot also be implemented to address underlying threats to the tortoise. The RITs will regularly engage with the MOG to report on progress in implementing recovery actions. The next version of the recovery action plan (i.e., version 2) will include a “report card” on the progress of recovery implementation.

LITERATURE CITATION OF THIS DOCUMENT SHOULD READ AS FOLLOWS:

U.S. Fish and Wildlife Service. 2014. Recovery action plan for the Mojave desert tortoise in California. U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. Developed in coordination with the California Mojave Recovery Implementation Team. 62 pp.

TABLE OF CONTENTS

	page
A. INTRODUCTION	**1**
B. CALIFORNIA MOJAVE RIT PARTICIPANTS	**5**
West Mojave workgroup	5
NE California Mojave workgroup	5
Colorado Desert workgroup	6
C. PRIORITIZED ACTION PLANS BY WORKGROUP	**7**
West Mojave Workgroup and Tortoise Conservation Areas (TCAs) therein	9
W. Mojave workgroup area (across or outside of TCAs)	11
Fremont-Kramer critical habitat unit & DTRNA	16
Superior-Cronese critical habitat unit	21
Ord-Rodman critical habitat unit	24
NE California Mojave Workgroup and TCAs therein	27
NE CA Mojave workgroup area (across or outside of TCAs)	29
Mojave National Preserve	35
Ivanpah Area of Critical Environmental Concern (ACEC)	37
Piute-Fenner ACEC	39
Shadow Valley ACEC	41
Death Valley National Park	43
Colorado Desert workgroup and TCAs therein	45
Colorado Desert workgroup area (across or outside of TCAs)	47
Chemehuevi critical habitat unit	50
Chuckwalla critical habitat unit	52
Joshua Tree National Park	54
Pinto Mountains ACEC	55
Other site-specific actions proposed by RIT members	56
D. TRACKING & MONITORING PLAN	**58**
Reporting recommendations for recovery action implementation and maintenance	58
Plan for supporting monitoring and research to assess action effectiveness	58
Overall Recovery Action Plan effectiveness monitoring needs	58
Monitoring for effectiveness of specific recovery action types	59
Priority needs for effectiveness monitoring or research: West Mojave	59
Priority needs for effectiveness monitoring or research: NE CA Mojave	60
Priority needs for effectiveness monitoring or research: Colorado Desert	60
E. NEXT STEPS	**62**

ONLINE APPENDIX: BACKGROUND & SUPPORTING INFORMATION

http://www.fws.gov/nevada/desert_tortoise/dtro/ca.html

Ranked threats for the each workgroup's tortoise conservation areas & region

Ranked recovery action types for each workgroup's tortoise conservation areas & region

A. INTRODUCTION

Overview of Recovery Implementation Teams

The revised recovery plan (USFWS 2011) called for the establishment of regional Recovery Implementation Teams (RITs). The RITs are appointed recovery teams, per section 4(f)(2) of the Endangered Species Act (Act), are advisory to the U.S. Fish and Wildlife Service, and are exempt from the Federal Advisory Committee Act. The RITs bring together partners from land management, scientific, conservation, and land-use groups to work together with the Fish and Wildlife Service on planning, implementing, tracking, and evaluating recovery actions. Necessary to this diverse partnership, RIT members must have a commitment to working collaboratively for recovery of the desert tortoise and be knowledgeable about desert tortoise issues, including related management issues.

The primary responsibility of each RIT is to partner across local and regional jurisdictional boundaries to plan, implement, and evaluate actions related to desert tortoise recovery. Diverse teams are essential because of the many jurisdictions and stakeholders involved in implementing actions related to desert tortoises. A cooperative/coordinated effort among land managers, wildlife agencies, stakeholders, and scientists will:

- Accomplish recovery goals that would be unattainable on a local scale;
- Reduce duplication of effort and increase the efficient use of resources and expertise; and
- Increase public and federal/state/local agency support for recovery by providing consistent information on the status of desert tortoise recovery implementation throughout the species' range.

Organization of the RITs is based on recovery units and land management planning areas, configured in a manner that will also be logistically practical from a jurisdictional perspective. The California Mojave RIT is composed of three workgroups: West Mojave workgroup, NE California Mojave workgroup, and Colorado Desert workgroup. The specific tasks for each RIT workgroup are to:

- Develop a science-based recovery action plan for its assigned geographical area;
- Coordinate implementation of recovery actions contained in the recovery action plan;
- Provide/secure/coordinate the necessary resources for implementation of recovery actions;
- Assess effectiveness of implemented recovery actions;
- Compile results into a range-wide database and local-level decision support system;
- Report findings and status annually to appropriate regional groups and the Desert Tortoise Management Oversight Group; and
- Review recovery action plans and revise as necessary.

More information on the RITs can be found in the full "RIT Terms of Reference," available at http://www.fws.gov/nevada/desert_tortoise/dtro/dtro_rits.html.

Development of the Recovery Action Plan

Each RIT workgroup was provided with the most up-to-date information from the desert tortoise spatial decision support system (SDSS), including rankings of recovery action types for each tortoise conservation area and the overall workgroup area. Using a consensus-based framework, each workgroup proposed specific actions within these ranked recovery action types and then prioritized these actions based on information within the SDSS, the workgroup members' on-the-ground knowledge, and each party's individual interests. Each workgroup also identified priority needs for effectiveness monitoring or research in their area. The recovery action plan contains these priorities for all three workgroups of the California Mojave RIT. This recovery action plan is intended to be revisited and updated to reflect new information and to report progress on implementation of specific recovery actions. Public feedback on this plan will also be considered by the RITs in subsequent revisions. Similar recovery action plans have been developed for the North-East Mojave RIT and the Upper Virgin River RIT.

The desert tortoise SDSS is a model of threats to tortoise populations, a purposeful tool for structured recovery action planning. Structured decision-making tools are not designed to represent on-the-ground "truth," but rather are designed to provide for transparent, systematic problem-solving (Starfield, AM. 1997. A pragmatic approach to modeling for wildlife management. Journal of Wildlife Management 61:261-270). The desert tortoise SDSS provides background information about the most important threats in particular areas and rankings of recovery action types for the workgroup's tortoise conservation areas and region. Utilizing this type of pragmatic modeling prevents managers from becoming paralyzed by shortcomings in understanding or by limited data availability, while highlighting data and information needs. It also makes it incumbent on RIT participants to use on-the-ground, site-specific knowledge provided by individual RIT members in tandem with guidance from model outputs and not rely on computer output alone.

Much of the background information captured within the SDSS that contributed to this planning process can be explored and downloaded from http://www.fws.gov/nevada/desert_tortoise/dtro/ca.html, including:

- Threats ranked by their estimated overall contribution to risk in each tortoise conservation area, and
- Ranked recovery action types based on their estimated overall contribution to decreasing risk to the tortoise in each tortoise conservation area.

More in-depth information is accessible in two on-line tools. The Desert Tortoise Recovery Model Explorer is a tool in the form of a website (http://www.fws.gov/nevada/desert_tortoise/dtro/model.html) where one can explore the model underlying the decision support system. The current version of the model is based on Appendix A of the revised recovery plan and feedback from RIT members. Specifically, one can use the Model Explorer to find information about how threats affect tortoises and how recovery actions affect particular threats. The Data Explorer is another tool in the form of a website (http://www.fws.gov/nevada/desert_tortoise/dtro/data.html) where one can explore each data layer (map) used in the decision support system. The spatial distribution of threats, as well as recovery actions that already have been completed in the RIT areas for which we have spatial data, can be found on the Data Explorer. These data layers have been reviewed by RIT members. Although we will never have perfect knowledge about the effects of threats on tortoises, these

tools provide a framework for organizing the best available information, improving data sources and models, and undertaking adaptive management for desert tortoise recovery.

How should this document be interpreted and used?

This recovery action plan is the product of collaborative discussion among RIT participants about the highest priority on-the-ground actions to be taken over the next few years. The intent behind the plan is to identify specific actions in need of funding for implementation. The recommendations are available for consideration to be implemented by land and wildlife management agencies as budgeting and planning occur and as other opportunities arise. Proponents of projects conducted within desert tortoise habitat may find the recovery action plan useful in identifying actions to compensate for impacts to desert tortoise populations or habitat in particular areas. Implementation of recovery actions will occur within existing land-management and environmental-review processes and subject to funding availability, other competing priorities (*e.g.*, for non-tortoise related actions), and logistical constraints of the responsible implementing entity.

As mentioned previously, the RITs are composed of individuals with diverse backgrounds and interests. As a result, not all recommendations were universally supported by RIT participants. In such cases, dissenting viewpoints or clarifying opinions are reflected in the document to capture the full range of input provided during the process and to inform managers of potential issues or concerns related to implementation. In some cases dissenting opinions may stimulate ideas for alternative actions that may still address the underlying threats to desert tortoises. In addition, not all groups contained the local management expertise to provide very specific prescriptions. Therefore, various actions will involve further development by appropriate specialists in the relevant agencies. Where the recovery action plan calls for development of a separate topic-specific plan, task groups of appropriate specialists may be coordinated by the Fish and Wildlife Service or individual RIT members to draft these plans.

The emphasis given to or taken from specific activities in the recovery action plan was heavily influenced by the specific composition of each RIT workgroup and the background and on-the-ground knowledge of workgroup participants. Gaps between prescriptions based on best available science and RIT recommendations can be measured by the differences in prioritization seen between RIT priorities and SDSS rankings in each workgroup's table of prioritized actions. In addition, summary tables at the beginning of each workgroup's prioritizations provide a comparison between the number of actions proposed in each action type and the SDSS ranking. Another artifact of the process of developing this recovery action plan is that recommendations do not always align smoothly across workgroup or RIT boundaries, thereby creating occasional inconsistencies in approaches or priorities across biologically irrelevant lines on a map. Nevertheless, the recovery action plan provides a yardstick against which progress toward recovery can be made. Updates will occur on an ongoing basis in conjunction with reports to the Desert Tortoise Management Oversight Group and other appropriate regional management groups. Progress in implementing recovery actions and future coordination within and between RIT workgroups will provide opportunities to refine recommendations based on new information, address dissenting opinions reflected in the current plan, consider input provided outside the RITs, and better integrate recommendations across boundaries.

Finally, as noted by many RIT participants, the recovery action plan is not comprehensive in that much of the recovery program relies on development of policy-level prescriptions rather than the site-specific actions captured in this document. In particular, there was concern that in light of the current reality of many development projects and rights of way being authorized within tortoise habitat, issues related to habitat loss are not directly addressed by this RIT plan. *Therefore, we note that the action of protecting intact desert tortoise habitat, including linkages between tortoise conservation areas, is emphasized in the revised recovery plan even though it is not addressed specifically in the recovery action plan.*

B. CALIFORNIA MOJAVE RIT PARTICIPANTS

West Mojave workgroup

Land Management	U.S. Army, Fort Irwin	Clarence Everly
Land Management	Marine Corps Air-Ground Combat Center Twenty-Nine Palms	vacant
Land Management	U.S. Navy, China Lake, Naval Air Weapons Station	vacant
Land Management	U.S. Marine Corps Logistics, Barstow	Vicki J. Davis
Land Management	Bureau of Land Management, Barstow Field Office	Chris Otahal
Land Management	U.S. Air Force, Edwards Air Force Base	Danny Reinke
Wildlife Management	California State Parks	vacant
Wildlife Management	California Department of Fish and Wildlife	vacant
Tribe	Center for California Native Nations	vacant
County	Inyo County	Joshua Hart
County	Los Angeles County	Shirley Imsand
County	Kern County	Lorelei Oviatt
County	San Bernardino County	Gerry Hillier
Conservation Biology	U.S. Geological Survey, Western Ecological Research Center	Kristin Berry
Conservation Organization	The Nature Conservancy	Laura Crane
Resource Use	Sempra Utilities	Chris Sowell
Recreation		vacant

NE California Mojave workgroup

Land Management	Death Valley National Park	Linda Manning
Land Management	Mojave National Preserve	Debra Hughson
Land Management	Bureau of Land Management, California Desert District	Larry LaPre
Wildlife Management	California Department of Fish and Wildlife	Becky Jones
Tribe	Timbisha Shoshone Tribe	vacant
County	Inyo County	Bill Lamb
County	San Bernardino County	David Prusch
Conservation Biology		vacant
Conservation Organization	Defenders of Wildlife	Jeff Aardahl
Resource Use	Range Improvement Advisory Committee	Ron Kemper
Recreation	California Association of 4-Wheel Drive Clubs	John Stewart

Colorado Desert workgroup

Land Management	Bureau of Land Management, Palm Springs Field Office	Mark Massar
Land Management	Joshua Tree National Park	Michael Vamstad
Land Management	U.S. Army, Chocolate Mountains Air Gunnery Range	vacant
Wildlife Management	California State Parks	Eric Hollenbeck
Wildlife Management	California Department of Fish and Wildlife	Stefan Awender
Tribe	Chemehuevi Indian Tribe	vacant
County	Imperial County	Andy Horne
County	Riverside County	vacant
County	San Bernardino County	Gerry Hillier
Conservation Biology	U.S. Geological Survey, Southwest Biological Science Center	Jeff Lovich
Conservation Organization	Western Watersheds Project	Michael Connor
Resource Use	California Energy Operating Company	Alex Schriener
Recreation	San Diego Off-Road Coalition	Chris Sprofera

C. PRIORITIZED ACTION PLANS BY WORKGROUP

The following tables include the prioritized site-specific recovery actions recommended by each of the three California Mojave RIT workgroups, organized by tortoise conservation area. The RITs were asked to describe specific, on-the-ground recovery actions that cooperating entities would implement if they had the funding. Details such as location or scope of the action that are not specified here may be specified in future, more detailed project proposals/concepts. RIT participants were asked to disregard issues of cost, feasibility, and politics in brainstorming recovery actions and to focus instead on biological issues related to threats to tortoises within their workgroup areas. Implementation will be determined by funding availability, logistics, and other agency priorities. Within this context, other actions, even if not prioritized here, may still be relevant and appropriate in meeting underlying threat-reduction objectives; this recovery action plan does not preclude innovative ideas to achieve recovery of the Mojave desert tortoise.

Glossary of Terms used in the Tables of Prioritized Actions

RIT Priority is the workgroup's assigned priority for each action.

> **Priority 1** actions are those that the workgroup deemed the highest priority for implementation. These actions have the highest expected effectiveness for contributing to tortoise recovery and/or need to be completed first to allow for other actions to be implemented. In some cases, these actions may already be underway or planned for implementation within the planning period.
>
> **Priority 2** actions are those that are the next highest priority for implementation after priority 1 actions have been initiated.
>
> **Priority 3** actions are those that are the lowest highest priority for implementation, but that the workgroup would still like to see implemented in this approximately 5-year planning period. These actions are the lowest priority due to their anticipated effectiveness and/or potential for implementation. These actions are to be pursued only after priority 1 and 2 actions have been implemented.

SDSS RA type rank refers to the ranking of the recovery action type from the SDSS (October 2012), under which the specific action was proposed (*e.g.*, an SDSS RA type ranking 3 tells us that this action came from the recovery action type that was ranked 3rd for this Tortoise Conservation Area). You can find the definition of each recovery action type on the Desert Tortoise Recovery Model Explorer (http://www.fws.gov/nevada/desert_tortoise/dtro/model.html).

RA code is the short-hand code for the SDSS recovery action type under which specific actions were proposed.

Workgroup identifier number refers to the specific number that the action was given at the RIT in-person meeting. The number is the ranking of the recovery action type from the SDSS under which the specific action was proposed, followed by the order in which the action was

proposed (*e.g.*, workgroup identifier number 3.02 tells us that this action came from the recovery action type that was ranked 3rd for this Tortoise Conservation Area and that it was the 2nd specific action proposed by RIT members under this type.)

Dissenting Opinions were submitted by workgroup members if they did not support a particular action that was prioritized by the rest of the workgroup, or if they felt other clarifying comments were necessary. Actions which received dissenting opinions or clarifications are noted with a footnote that describes the reasoning behind the dissent.

West Mojave Workgroup and Tortoise Conservation Areas therein

The West Mojave workgroup area is composed of three Tortoise Conservation Areas:

1. Fremont-Kramer critical habitat unit + Desert Tortoise Research Natural Area (DTRNA)
2. Superior-Cronese critical habitat unit
3. Ord-Rodman critical habitat unit

The workgroup prioritized actions for each of these areas, as well as for the workgroup area as a whole for actions to be implemented across or outside of Tortoise Conservation Areas.

Summary Table of Actions Prioritized by the West Mojave Workgroup

Recovery Action (RA) Type from SDSS	RA code	SDSS ranking (workgroup)	# Site-specific Actions Prioritized	# Dissenting Opinions
Restore habitat	HAB	1	12	2
Environmental education	EDU	2	13[1]	1
Install & maintain tortoise barrier fencing	FEN	3	13	5
Decrease predator access to human subsidies	SUB	4	16	1
Install & maintain human barriers (wildland-urban interface)	WUI	5	2	
Targeted predator control	PRD	6	11	
Restore roads (e.g., vertical mulching)	RER	7	9	2
Restore habitat (toxicants/unexploded ordinance)	TOX	8	3	
Increase law enforcement	LEO	9	10	
Install & maintain tortoise barriers (open OHV areas)	OOA	10	3	
Sign & fence protected areas	SFP	11	10	3
Remove grazing (close allotments)	GRZ	12	4	1
Sign designated routes	RTS	13	7	
Install & maintain human barriers (preserves)	PRE	14	7	
Withdraw mining	MNG	15	5	3
Manage disease in wild populations	WDS	16	5	
Control dogs	DOG	17	8	
Fire management planning & implementation	FIR	18	2	1

[1] The individual environmental education actions should be consolidated into a coordinated strategy, given a lower priority at this time, and replaced with actions that will clearly address the immediate needs to conserve existing habitat and populations and to reduce threats to eliminate mortality of breeding adults and increase recruitment. (Defenders of Wildlife & Western Watersheds)

Recovery Action (RA) Type from SDSS	RA code	SDSS ranking (workgroup)	# Site-specific Actions Prioritized	# Dissenting Opinions
Designate & close roads (travel management plan)	TRV	19	5[2]	1
Manage disease in captive populations	CDS	20	2	
Landfill management	LAN	21	0	
Speed limits	SPD	22	0	
Connect habitat (culverts/underpasses)	CUL	23	1	
Land acquisition	ACQ	24	5	4
Minimize wild horse & burro impacts	WHB	25	0	
Restore habitat (garbage clean-up)	GAR	26	5	
Other	OTH	N/A	6	

[2] BLM and NPS should undertake new off-road vehicle/motorized vehicle route designations within desert tortoise habitat for the purpose of recovery or conservation of the species and its habitat and should apply the regulatory standards to minimize the adverse impacts of off-road vehicle use on public lands and their resources. (Defenders of Wildlife & Western Watersheds)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
West Mojave Workgroup Area: Actions to be implemented across or outside of Tortoise Conservation Areas			
1	2	EDU	Begin tortoise education in the schools and communities in all school districts within the West Mojave. (workgroup identifier number: 2.02)
1	2	EDU	Create an environmental education plan: Coordinate with all parties (Desert Tortoise Council, Desert Tortoise Preserve Committee, DMG, NPS, BLM, etc.); review what works and doesn't work. Focus on the goal of reducing mortality, deaths or loss of wild desert tortoises. Focus on the goal of reducing mortality, deaths or loss of wild desert tortoises (equivalent to deaths). Focus on target audiences and problems to see what can be done that will be more effective. Target particular user groups that generate problems with subsidized predators, trash, unauthorized uses, etc. Target publics to reduce spread of new diseases: prevent release of captive tortoises, the mixing of different species of turtles and tortoises, etc. The most effective targets may be local communities (for the next couple of years). Areas to target: California City, Ft. Irwin employees, Marine Corps Supply Center, Barstow and Hinkley residents, scattered exurban residents throughout the Mojave River Valley. (2.03)
1	2	EDU	Conduct environmental education to explain the benefits of eliminating subsidies in towns and cities in commercial and housing areas (e.g. targeting open dumpsters). (2.05)
1	2	EDU	Continue tortoise awareness training at all permitted OHV events. (2.06)
1	2	EDU	Expand tortoise education opportunities at the visitor centers and public contact stations - increase number of public classes. (2.07)
1	2	EDU	Conduct more public outreach regarding pet tortoise regulations - develop brochure to disseminate at public events, humane societies, and other education centers such as the Desert Discovery Center in Barstow. (2.08)
1	2	EDU	Provide tortoise awareness presentations to public and city and county road maintenance personnel. (2.10)
1	2	EDU	Targeted education to stop captive breeding and releasing. Regulations to restrict mixing of male and female captive tortoises. (2.11)
1	4	SUB	Hire a full-time enforcement and education person to bring about reduction in subsidies, to check all landfills and dumps (enforcement), etc. (4.01)
1	6	PRE	Implement DMG Regional Raven Management Plan. (6.01)
1	6	PRE	Have Caltrans remove raven nests from their signs along highways. (6.02)
1	6	PRE	Require all development projects on public land to fund the DMG California Desert Fund on a per acre basis. (6.04)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
West Mojave Workgroup Area: Actions to be implemented across or outside of Tortoise Conservation Areas			
1	6	PRE	Hire full-time raven control specialist for areas outside of critical habitat, amend existing management plans to allow for more aggressive approaches to control of ravens (e.g., starlicide in appropriate areas, within or on boundaries of critical habitat; baiting of ravens to target known killer birds). One task will be to identify subsidies. (6.07)
1[3]	24	ACQ	Acquire parcels within identified connectivity corridors. (24.02)
1	30	OTH	Modify and strengthen regulations (and educate about) to prevent captive breeding and release of desert tortoises. (30.01)
1	30	OTH	Protect ACEC/DWMA's from wind energy and other development. (30.02)
2	1	HAB	Develop a competitive tortoise habitat restoration grant program. (1.01)
2[4]	1	HAB	Develop a Saharan mustard management plan for the West Mojave. Include a suppression and removal program for Saharan mustard along highways, roads, powerline roads, county roads, etc. in Ord-Rodman, Superior-Cronese, and Fremont Kramer using whatever means necessary, including herbicides as an objective of halting the spread into washes and open desert. (1.02)
2[5]	1	HAB	Develop a Brome grasses management plan for the West Mojave. Include a suppression and removal program for Brome in Ord-Rodman, Superior-Cronese, and Fremont Kramer using whatever means necessary, including herbicides as an objective of halting the spread into washes and open desert. (1.03)
2	1	HAB	Begin experimental seeding with native grasses and annual plants important to the desert tortoise within desert tortoise habitat, particularly in the DWMAs. (1.04)
2	2	EDU	Saturate the desert towns, cities, exurban areas with information about tortoise diseases, unauthorized releases of captive tortoises, and options for placing unwanted captive tortoises with the California Turtle and Tortoise Club. (2.01)
2	2	EDU	Conduct environmental education associated with the signing of designated routes launched under court order. (2.04)
2	2	EDU	When installing new informational kiosks at major access-points into tortoise habitat, include tortoise messages (*i.e.*, trash, dogs, ravens, captive release, etc.). The structure should prevent raven perching as appropriate. (2.09)

[3] Consolidated land areas have already been set aside as conservation areas and wilderness. The County cannot support such a general action as proposed; case-by-case consideration is appropriate. (G. Hillier, San Bernardino County)

[4] Herbicides should not be considered in habitat restoration implementation. Order of preference for habitat restoration: manual removal, mulching, controlled burns, and biocontrols. (Los Angeles County)

[5] Herbicides should not be considered in habitat restoration implementation. Order of preference for habitat restoration: manual removal, mulching, controlled burns, and biocontrols. (Los Angeles County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
West Mojave Workgroup Area: Actions to be implemented across or outside of Tortoise Conservation Areas			
2	3	FEN	Consider connectivity measures where appropriate. (3.01)
2[6]	4	SUB	Check all local and regional landfills for evidence of use by subsidized predators. Develop a zero-tolerance for subsidies to predators at those sites. (4.02)
2	4	SUB	Facilitate the development of and enforce ordinances to ensure a zero-tolerance for subsidies to predators within all towns and cities bordering and adjacent to critical habitat (dumpsters, trash at commercial areas, housing areas, trees used as perches, dog and cat food left outside, stray dogs) coupled with fines; e.g., Randsburg, Cantil, Ridgecrest, Inyokern, Goler Heights, Red Rock Canyon State Park, Jawbone Canyon OHV Area, Dove Springs Open Area, Mojave, North Edwards, Boron, Hi Vista, Lancaster, Adelanto Areas. (4.03)
2	4	SUB	Through enforcement, stop the feeding of predators, *e.g.*, the persons deliberately feeding ravens throughout the West Mojave (*e.g.*, in Ridgecrest and on base, in the vicinity of EAFB and Hi Vista, etc.). (4.04)
2	4	SUB	Launch education programs in residential areas regarding not leaving pet foods outdoors, garbage cleanup in cities at restaurants, and prompt cleanup of road kills on the Interstate. (4.05)
2	4	SUB	Provide funding to counties and cities to cleanup illegal dumping. Create a priority area list for each county for grant proposals. (4.08)
2	4	SUB	Implement an illegal dumping prevention program in communities. Partner with cities and counties. Work with local law enforcement and education. (4.09)
2	6	PRE	Monitor and reduce raven nesting sites, implement raven control measures to reduce populations, and minimize raven attractors (primarily trash) in Pearsonville, Rose Valley (Coso Junction), Trona, Homewood Canyon, and China Lake NAWS (including at the Geothermal Power Plant). Work with private property owners/entities (including the Pearsons, mine operators, and Coso Geothermal) and land managers (DOD, BLM, DWP, Forest Service, and the County) in these communities to educate them about raven management. (6.06)
2	9	LEO	Increase the number of BLM enforcement rangers and CDFW wardens specifically for tortoise recovery implementation assigned to areas outside of critical habitat. (9.01)

[6] Ordinances are adopted by local governments and require a full public process; Kern County will not support, enact or allow enforcement of a federal action on private land for such land use restrictions. The action is inappropriate, infeasible and should be deleted. (L. Oviatt, Kern County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
West Mojave Workgroup Area: Actions to be implemented across or outside of Tortoise Conservation Areas			
2	9	LEO	Employ 'park rangers' specifically for tortoise recovery implementation to work full-time in assessing status of the lands, fencing, and signage and in making contact with desert users and monitoring and reporting compliance in areas outside of critical habitat. These people would not be law enforcement personnel but would carry radios and contact law enforcement when necessary. (9.02)
2	9	LEO	Fund one full-time law enforcement Ranger or Sheriff's deputy who will be on duty during major holidays and OHV use areas in the West Mojave throughout the year. This person should be able to enforce both state and federal laws and would target OHV offenders, people with out of control dogs, people providing subsidies to predators, dumping of trash, etc. (9.03)
2	11	SFP	Sign major tourist routes such as Route 66 with tortoise warning signs. (11.01)
2	11	SFP	Sign major BLM open routes with tortoise warning signs. (11.02)
2	11	SFP	Develop new rules and signing in critical habitat to discourage people travelling and parking off a route or trail where it may have particularly negative effects on tortoises and tortoise habitat in the West Mojave Recovery Unit. Because the BLM has policies allowing camping and parking within 100 ft. or yards (or similar) of a road or trail, certain areas turn into de facto camping and parking and OHV play areas. Examples are common along the 20 Mule Team Road (*e.g.*, parts on federal land, east of Hwy 395). The result is highly disturbed and denuded areas in critical habitat, areas that grow and expand in size. In Lucerne Valley (Ord-Rodman critical habitat), examples can be found along the power line roads. (11.03)
2[7]	12	GRZ	Purchase targeted grazing (especially sheep) in the California Desert Conservation Area boundary as a mitigation program. Provide for the implementation of HR 2055 which will therefore provide for dedication of the land associated with the donation, including land use restrictions, for the benefit of wildlife. (12.01)
2	13	RTS	Implement BLM's West Mojave Route Monitoring Plan which calls for signing over 5,000 miles of open routes and monitoring of sign placement. (13.01)
2	19	TRV	Complete and implement BLM's West Mojave Route Designation / Travel Management Plans to reduce route densities in tortoise habitat. (19.01)

[7] The HR 2055 provision is intended as: a) voluntary program, and b) for mitigation. It should not be pressed as a BLM initiative. It also ignores that grazing can be managed as a positive practice for habitat management and fuels reduction. (G. Hillier, San Bernardino County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
West Mojave Workgroup Area: Actions to be implemented across or outside of Tortoise Conservation Areas			
2	20	CDS	Prepare and implement a management plan across the West Mojave to manage disease in captive populations: *e.g.*, no adoptions of tortoise with positive ELISA tests for *Mycoplasma* and herpesvirus and clinical signs of disease; adoptions of one tortoise per family only; no adoptions to people with other species of chelonians. Consider using the Arizona model as an example. (20.01)
2	20	CDS	Establish drop-off site for unwanted captive tortoises. (20.02)
3	6	PRE	Provide funding to county/ city animal control departments for a focused feral dog abatement program that includes surveys of areas as well as abatement activities. (6.05)
3	7	RER	Facilitate obscuring/restoration with vertical mulching of closed routes prioritized during BLM monitoring within or leading to tortoise habitat. (7.01)
3	16	WDS	Ask public to report illegal dump sites; toxicants and contaminants, from trash and other waste products are another source of illness in tortoises. (16.01)
3	17	DOG	Determine existing county, city, policies; if none and if they are ineffective, develop policies that will allow rapid, on-site removal/disposal of offending animals. Dogs come from the urban and exurban areas, often from single homes or small clusters of homes such as Goler Heights, Randsburg, Johannesburg, Boron, California City, etc. (17.01)
3	17	DOG	Develop and/or enforce strict requirements for dogs under control outside critical habitat and allow for removal of all dogs off-leash and unlicensed by any means (not necessarily a "dog catcher" who is unlikely to come out to the desert). (17.02)
3	23	CUL	Connect habitat when fencing actions are taken, where appropriate. (23.01)
3	30	OTH	Identify and limit shooting and plinking areas to designated areas. (30.03)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Fremont-Kramer Critical Habitat Unit & Desert Tortoise Research Natural Area (DTRNA)			
1	1	HAB	Restore areas of habitat disturbance that serve as staging areas for unauthorized vehicle use (workgroup identifier number: 1.04)
1[8]	3	RER	Facilitate restoration of closed routes with vertical mulching prioritized during BLM monitoring within the Fremont-Kramer Critical Habitat Unit - restore high priority routes first. (3.01)
1	3	RER	Continue program of assuring that closed roads and trails don't get re-opened. (3.02)
1[9]	3	RER	Conduct removal of alien plants by pulling, herbicides, or other techniques to decrease invasion of alien plants (such as *Hirschfeldia incana* and *Brassica tournefortii*) along roads that are intended to be "laid to rest." The roads that have been recovering "naturally" in the DTRNA are a good source of information, closed off since 1980 or earlier. Roads that have been graded will need different approaches than ungraded roads and OHV trails. (3.03)
1	4	FEN	Install tortoise barrier fencing along the entire length of Highway 395 (both sides) within the Fremont - Kramer Critical Habitat Unit. (4.01)
1	4	FEN	Work with and educate road crews and engineers to reduce berms along dirt roads to reduce the number of desert tortoises that are trapped in the road berm. (4.06)
1	6	PRD	Conduct aggressive raven removal at DTNA. (6.01)
1	6	PRD	Launch aggressive raven control throughout the critical habitat area and assure follow-on treatments to prevent the populations returning to current levels. (6.02)
1	6	PRD	Make the DTRNA a "no raven" fly zone and use it as an experimental area to see if ravens can be excluded AND if juveniles can survive at higher rates and be incorporated into the adult age classes. (6.04)
1	6	PRD	Use avicide to reduce raven populations in the vicinity of the DTRNA and other critical habitat areas, *e.g.*, EAFB in the Fremont-Kramer critical habitat. (6.05)
1	6	PRD	Hire full-time raven control specialist for Fremont-Kramer, amend existing management plans to allow for more aggressive approaches to control ravens (*e.g.*, starlicide in appropriate areas, within or on boundaries of critical habitat; baiting of ravens to target known killer birds). One task will be to identify subsidies and educate to eliminate them. (6.06)
1	11	LEO	Increase the number of BLM enforcement rangers and CDFW wardens specifically for tortoise recovery implementation assigned to critical habitat. (11.01)

[8] Herbicides should not be considered in habitat restoration implementation. (Los Angeles County)
[9] Herbicides should not be considered in habitat restoration implementation. (Los Angeles County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Fremont-Kramer Critical Habitat Unit & Desert Tortoise Research Natural Area (DTRNA)			
1	11	LEO	Employ 'park rangers' specifically for tortoise recovery implementation to work full-time in assessing status of the lands, fencing, and signage and in making contact with desert users and monitoring and reporting compliance in critical habitat. These people would not be law enforcement personnel but would carry radios and contact law enforcement when necessary. (11.02)
1	23	ACQ	Bring land trusts, NGOs and government agencies together to get priorities established and improve coordination and implementation: the Fremont-Kramer critical habitat and DTRNA have numerous inholdings of private land within and adjacent to public parcels. (23.01)
1[10]	23	ACQ	Acquire through purchase, exchange or other methods, the inholdings within the Fremont-Kramer critical habitat. (23.02)
2	1	HAB	Conduct habitat restoration at the landscape scale in Fremont-Kramer using exclosures and protection with fencing followed by "natural recovery" of closures. (1.02)
2	1	HAB	Begin experimental treatments with herbicides to treat annual grasses and reduce competition with perennials. Begin the work in the DTRNA. (1.03)
2	2	EDU	Begin tortoise education in the schools and community in California City. (2.01)
2[11]	4	FEN	Install tortoise barrier fencing along Garlock roads - 40 miles of fencing. (4.02)
2	5	SUB	Work with California City to reduce trash that may be available to ravens. (5.01)
2	5	SUB	Work with cities and towns near Fremont-Kramer to reduce trash that may be available to ravens. (5.02)
2	5	SUB	Eliminate subsidies with better trash control at Kramer Junction through ordinances and enforcement. (5.03)
2	5	SUB	Eliminate raven attractants along highway rest stops on Hwy 58 through active deterrents and better control of trash. (5.04)
2	5	SUB	Discourage perching of 400 ravens in trees within California City (California City Blvd) using laser gun or starlicide. (5.05)
2	6	PRD	Launch aggressive coyote control throughout the critical habitat area and assure follow-on treatments to prevent the populations returning to current levels. (6.03)

[10] The County has standing objections to further federal land acquisition unless it can be accompanied with either no net loss to property tax revenue or a change in PILT in which BLM acquisitions would be bundled in the same manner as NPS. (G. Hillier, San Bernardino County)

[11] Desert tortoise populations both north and south are small; the investment of money for both construction and maintenance is not justified. The County would not object to BLM conducting this action with their own funds. (L. Oviatt, Kern County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Fremont-Kramer Critical Habitat Unit & Desert Tortoise Research Natural Area (DTRNA)			
2[12,13]	7	SFP	Construct fencing with signage around critical habitats in the vicinity of communities, where they abut on critical habitat, *e.g.*, Randsburg/ Johannesburg, Helendale/Silver Lakes, south edge of EAFB to prevent tortoises from entering communities and dogs from entering habitat. (7.02)
2	7	SFP	Install and maintain human barriers around Kramer Junction. (7.04)
2[14]	8	MNG	Withdraw 32,590 acres of critical habitat within the Rands from mineral entry, per recommendation in the West Mojave Plan. (8.01)
2	8	MNG	Update and file the DTRNA mining withdrawal (general land laws, mining laws and livestock grazing). The withdrawal was supposed to be renewed in 2000. The BLM prepared a package for renewal, published it in the Federal Register and then did nothing with the package. The package should be updated and filed to continue the withdrawal. (8.02)
2	10	RTS	Implement BLM's West Mojave Route Monitoring Plan which calls for signing over 5,000 miles of open routes and monitoring of sign placement and monitor compliance. (10.01)
2	10	RTS	Publish up-to-date route maps and show locations of signs on the map, so members of the public can expect to see them. If they don't see them, then they can report missing signs. (10.03)
2	12	TOX	Clean-up potential toxicants and associated trash on critical habitat on EAFB and in the old, abandoned Cuddeback Aerial Gunnery Range. (12.01)
2	13	WDS	Develop and implement a management plan for infectious diseases in critical habitat to protect tortoises. (13.01)
2	13	WDS	Ensure that captive tortoises do not escape or are not released deliberately (because captives in general have a high incidence of disease) with better signage at the DTRNA and Red Rock Canyon State Park. (13.02)
2	17	TRV	Complete and implement BLM's West Mojave Route Designation / Travel Management Plans to reduce route densities in tortoise habitat. (17.01)

[12] The County lacks authority to force property owners to do exclusion fencing on private land; the County cannot become financially obligated for this action. The County would not object to BLM conducting this action with their own funds. (G. Hillier, San Bernardino County)

[13] The County lacks authority to force property owners to do exclusion fencing on private land; the County cannot become financially obligated for this action. (L. Oviatt, Kern County).

[14] Kern County supports mineral extraction which has economic benefits both for jobs and manufacturing uses. Review mining projects on a case-by-case basis and apply best practices and avoidance measures through reclamation. (L. Oviatt, Kern County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Fremont-Kramer Critical Habitat Unit & Desert Tortoise Research Natural Area (DTRNA)			
2	22	DOG	Construct dog-proof and possibly electric fences in the vicinity of the EAFB critical habitat to keep out dogs. A sample of 51 tortoises evaluated in spring 2012 at EAFB had a high prevalence of damage to the shells typical of dogs. Similar samples elsewhere had high incidence of dog chews and trauma. (22.01)
2	22	DOG	Construct dog-proof fencing adjacent Goler Heights, Randsburg, Boron, Hi-Vista, Buckhorn Wash, and similar areas. A sample of 51 tortoises evaluated in spring 2012 at EAFB had a high prevalence of damage to the shells typical of dogs. Similar samples elsewhere had high incidence of dog chews and trauma. (22.02)
2	22	DOG	'Develop and/or enforce strict requirements for dogs under control in critical habitat and allow for removal of all dogs off-leash and unlicensed by any means (not necessarily a "dog catcher" who is unlikely to come out to the desert). (22.03)
2	24	GAR	Institute major clean ups within Fremont-Kramer, especially adjacent to roads. (24.01)
3	1	HAB	Close targeted abandoned mines that pose a risk to tortoises. (1.01)
3[15]	4	FEN	Install tortoise exclusion fencing along the east side of the Shadow Mountain Road. (4.03)
3[16]	4	FEN	Install tortoise barrier fencing along Randsburg-Red Rock Road. (4.04)
3	4	FEN	Fence tortoises out of graded dirt roads with berms: Randsburg Mojave Road, BLM-graded roads within the Fremont-Kramer critical habitat (specifically in Fremont Valley). The berms are so high on these roads that tortoises get trapped within them, overheat, and die; especially vulnerable are small tortoises. (4.05)
3	7	SFP	Extend protective fencing to the ground (exclusion fencing, keeping tortoise inside) and include signage in the eastern and western expansion parts of the DTRNA to speed recovery. Include passages to allow for continued gene flow. (7.01)
3[17]	7	SFP	Construct fencing and signage along the Red-Rock Randsburg and Garlock Roads and the Randsburg-Mojave Road (to include CDFW parcels) to prevent tortoises from entering communities and dogs from entering habitat. (7.03)

[15] The County simply lacks the financial resources to do this; given current population levels it is uncertain that this would reduce take. The County would not object to BLM conducting this with their funds. (G. Hillier, San Bernardino County)

[16] Periodic flooding has damaged this road, and fencing will make it worse; the investment of money for both construction and maintenance is not justified. The County would not object to BLM conducting this action with their own funds. (L. Oviatt, Kern County)

[17] The benefit, given traffic counts of these roads is not economically worth the investment. (L. Oviatt, Kern County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Fremont-Kramer Critical Habitat Unit & Desert Tortoise Research Natural Area (DTRNA)			
3[18]	8	MNG	Withdraw the rest of the Fremont-Kramer habitat from the 1872 mining laws because this population is in such precarious condition and low density that it cannot afford further losses (policy). (8.03)
3	12	TOX	Clean-up toxic (arsenic) mine tailings in Fremont-Kramer in the vicinity of Randsburg, Johannesburg, and Red Mountain. Also fence off to exclude tortoises--probably entire settlements. (12.02)
3	19	GRZ	Install sheep exclusion fencing around the western and eastern expansion lands, acquired by the State of California and the Desert Tortoise Preserve Committee, Inc. for the DTRNA. (19.01)
3	27	OOA	Install tortoise barrier along north boundary of El Mirage OHV Area. (27.01)
3	30	OTH	Reduce target shooting and plinking in critical habitat by limiting to designated areas. (30.01)

[18] The County believes that there is no evidence that any current mining is or has had deleterious effects on the tortoise; BLM's West Mojave Plan allows 1% disturbance specifically to provide for activities such as mining. (G. Hillier, San Bernardino County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Superior-Cronese Critical Habitat Unit			
1	1	HAB	Restore areas of habitat disturbance that serve as staging areas for unauthorized vehicle use in Superior-Cronese. (workgroup identifier number: 1.03)
1	3	RER	Facilitate restoration of closed routes with vertical mulching prioritized during BLM monitoring within Superior-Cronese - restore high priority routes first. (3.01)
1	3	RER	Restore natural habitat on unauthorized routes within Superior-Cronese. (3.02)
1	5	SUB	Target ravens on Boulder Transmission Corridor and destroy nests as well as taking birds. (Assure follow-up; once through won't do the job.) (5.02)
1	5	SUB	Hire full-time raven control specialist for Superior-Cronese, amend existing management plans to allow for more aggressive approaches to control of ravens (*e.g.*, starlicide in appropriate areas, within or on boundaries of critical habitat; baiting of ravens to target known killer birds). One task will be to identify subsidies. (5.03)
1	6	FEN	Work with road crews to reduce berms along dirt roads to reduce the number of desert tortoises that are trapped in the road berm. (6.04)
1	7	LEO	Employ 'park rangers' specifically for tortoise recovery implementation to work full-time in assessing status of the lands, fencing, and signage and in making contact with desert users and monitoring and reporting compliance in critical habitat. These people would not be law enforcement personnel but would carry radios and contact law enforcement when necessary. (7.01)
1	7	LEO	Increase the number of BLM enforcement rangers and CDFW wardens specifically for tortoise recovery implementation assigned to critical habitat. (7.02)
1	11	RTS	Implement BLM's West Mojave Route Monitoring Plan which calls for signing over 5,000 miles of open routes and monitoring of sign placement within Superior-Cronese. (11.01)
1	11	RTS	Sign and maintain designated routes within Superior-Cronese. (11.02)
1	16	TRV	Complete and implement BLM's West Mojave Route Designation / Travel Management Plans to reduce route densities in tortoise habitat. (16.01)
1[19]	24	ACQ	Acquire through purchase, exchange or other methods, the inholdings within the Superior-Cronese critical habitat. (24.01)

[19] The County has standing objections to further federal land acquisition unless it can be accompanied with either no net loss to property tax revenue or a change in PILT in which BLM acquisitions would be bundled in the same manner as NPS. (G. Hillier, San Bernardino County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Superior-Cronese Critical Habitat Unit			
2	1	HAB	Close targeted abandoned mines that pose a risk to tortoises. (1.01)
2	1	HAB	Place tortoise-proof fencing around open mine shafts in region. (1.02)
2	2	EDU	Install educational kiosk at Owl Canyon / Rainbow Basin camping site. (2.01)
2	4	SUB	Investigate sources of subsidies to predators in the Superior-Cronese area and implement actions to reduce these subsidies. (4.01)
2	5	PRD	Hire full-time feral dog canid control specialist for Superior-Cronese, who would target domestic dogs. Examples of areas: Between I-15 and Ft. Irwin southern boundaries, both east and west of the Ft. Irwin Road; north and east of Harper Dry Lake and Hinkley (south, west, and east of Black Mountain Wilderness), along Copper City Road. (5.04)
2	6	LEO	Install human-barrier fencing along Highway 15 (both sides) along south western edge of Superior - Cronese Critical Habitat Unit. (6.01)
2	12	MNG	Withdraw mining at Coolgardie Mesa. (12.01)
2	14	WDS	Develop and implement a management plan for infectious diseases in critical habitat to protect tortoises. (14.01)
2	20	DOG	Control feral and domestic dogs in the urban interface area, particularly near the Ft. Irwin cantonment and along Copper City Road. (20.01)
2	20	DOG	Develop and/or enforce strict requirements for dogs under control in critical habitat and allow for removal of all dogs off-leash and unlicensed by any means (not necessarily a "dog catcher" who is unlikely to come out to the desert). (20.02)
2	23	GAR	Initiate a drive to clean up trash and informal dump sites on the northern and eastern side of Calico Mountains, in spur roads west and east off of the Ft. Irwin Road. (23.01)
2	23	GAR	Institute major clean ups within the critical habitat unit, especially adjacent to roads. (23.02)
3	5	PRD	Start coyote management for reduction south of Ft. Irwin where tortoises were translocated. (5.01)
3[20]	6	FEN	Construct and maintain tortoise-proof or exclusion fencing along Copper City Road, including graded dirt roads, Old Fort Irwin Road, Hinkley Road. (6.02)
3	6	FEN	Fence tortoises out of graded dirt roads with berms: Copper City Road. The berms are so high on these roads that tortoises get trapped within them, overheat, and die. Especially vulnerable are small tortoises. (6.03)

[20] The County simply lacks the financial resources to do this; given current population levels it is uncertain that this would reduce take. The county would not object to BLM conducting this with their funds. (G. Hillier, San Bernardino County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Superior-Cronese Critical Habitat Unit			
3	9	SFP	Install human barrier fencing along Highway 58 where it abuts critical habitat. (9.01)
3	10	TOX	Pick all kinds of trash and waste materials square mile by square mile, focusing first in the Calico Mountains and along graded and well-maintained dirt road. (10.01)
3[21]	12	MNG	No new mining ventures or operations should be permitted in critical habitat; acquire mineral rights. (12.01)
3	13	PRE	Construct dog proof and tortoise exclusion fences along the southern boundary of critical habitat near the Minneola off-ramp. (13.01)
3[22]	15	FIR	Utilize treatment or managed grazing experiments within Superior-Cronese with methods to limit or reduce flash fuels to reduce fire hazard and risk of catastrophic fire. (15.01)
3	30	OTH	Reduce target shooting and plinking in critical habitat by limiting to designated areas. (30.01)

[21] The County believes that there is no evidence that any current mining is or has had deleterious effects on the tortoise; BLM's West Mojave Plan allows 1% disturbance specifically to provide for activities such as mining. (G. Hillier, San Bernardino County)

[22] Livestock grazing was identified as an activity inconsistent with desert tortoise recovery (*cf.* 1994 Recovery Plan, p. 57). Removing grazing should be consistently ranked as a Priority 1 action across all recovery units. (Defenders of Wildlife & Western Watersheds)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Ord-Rodman Critical Habitat Unit			
1	4	SUB	At the Stoddard and Johnson Open Areas, require zero-tolerance for subsidies to predators (from trash, etc.) requiring trash pick-up by users. (workgroup identifier number: 4.01)
1	5	PRD	Launch aggressive predator control with emphasis on ravens on the transmission lines in Ord Rodman. Combine targeted reduction with nest destruction. (5.01)
1	5	PRD	Hire full-time raven control specialist for Ord-Rodman, amend existing management plans to allow for more aggressive approaches to control of ravens (*e.g.*, starlicide in appropriate areas, within or on boundaries of critical habitat; baiting of ravens to target known killer birds). One task will be to identify subsidies and to educate to eliminate them. (5.02)
1	7	RER	Facilitate restoration of natural habitat on closed routes with vertical mulching prioritized during BLM monitoring within the Ord-Rodman Critical Habitat Unit - restore high priority routes first. (7.01)
1	7	RER	Restore natural habitat on closed routes / illegal routes (vertical mulch) identified by BLM during implementation of West Mojave Route Monitoring Plan - restore high priority routs first. (7.02)
1	7	RER	If any routes in area are closed provide appropriate closure and treatment to prevent their re-opening. (7.03)
1	8	LEO	Increase the number of BLM enforcement rangers and CDFW wardens specifically for tortoise recovery implementation assigned to critical habitat. (8.01)
1	8	LEO	Employ 'park rangers' specifically for tortoise recovery implementation to work full-time in assessing status of the lands, fencing, and signage and in making contact with desert users and monitoring and reporting compliance in critical habitat. These people would not be law enforcement personnel but would carry radios and contact law enforcement when necessary. (8.02)
1	19	TRV	Continue route designation in Ord-Rodman and provide enforcement to maintain system. (19.02)
1[23]	24	ACQ	Block up private inholdings within the Ord-Rodman critical habitat through land exchanges, land acquisition, and other techniques. (24.01)
2	2	FEN	Install fencing (both sides) of Highway 40 along northern boundary of Ord-Rodman Critical Habitat Unit. (2.01)
2	2	FEN	Fence tortoises out of graded dirt roads with berms: Camp Rock Road. The berms are so high on these roads that tortoises get trapped within them, overheat, and die. Especially vulnerable are small tortoises. (2.02)

[23] The County has standing objections to further federal land acquisition unless it can be accompanied with either no net loss to property tax revenue or a change in PILT in which BLM acquisitions would be bundled in the same manner as NPS. (G. Hillier, San Bernardino County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Ord-Rodman Critical Habitat Unit			
2	4	SUB	Clean up trash in Ord-Rodman, post signs to warn of fines—especially areas of informal dumping areas along roads. (4.02)
2	5	PRD	Hire full-time feral dog canid control specialist for Ord-Rodman, who would target domestic dogs and coyotes for Ord-Rodman. Examples of areas: Lucerne Valley, Daggett, Barstow, Stoddard Valley, Newberry Springs. (5.03)
2	10	SFP	Sign Camp Rock Road with tortoise warning signs. (10.01)
2	10	SFP	Construct tortoise exclusion fencing (and place signs on the fencing) at the northern and western boundaries of the Johnson Valley Open Area. (10.02)
2	11	RTS	Implement BLM's West Mojave Route Monitoring Plan which calls for signing over 5,000 miles of open routes and monitoring of sign placement. (11.01)
2	11	RTS	Install signs at all designated, authorized routes in critical habitat. Monitoring should occur quarterly to ensure that designated routes are signed and that signs have not been vandalized or removed. (11.02)
2	13	WDS	Develop and implement a management plan for infectious diseases in critical habitat to protect tortoises. (13.01)
2	14	WUI	Install and maintain barriers in the vicinity of Daggett and Newberry (northern boundaries of the Ord-Rodman critical habitat) to dogs, unauthorized vehicle use, and other activities. Place signs at 1/10 mile intervals to note protective nature of fencing, activities that are prohibited, etc. (14.02)
2	17	OOA	Install tortoise barrier along 247 / Stoddard OHV Area interface. (17.01)
2	17	OOA	Construct a tortoise exclusion fence and vehicle exclusion fence along the western and northern boundaries of the Johnson Valley Open Area. The spillover of unauthorized vehicle use from the Johnson Valley Open Area into critical habitat has a negative impact on tortoise populations and habitat. (17.02)
2	19	TRV	Complete and implement BLM's West Mojave Rout Designation / Travel Management Plans to reduce route densities in tortoise habitat. (19.01)
2	23	DOG	Develop and/or enforce strict requirements for dogs under control in critical habitat and allow for removal of all dogs off-leash and unlicensed by any means (not necessarily a "dog catcher" who is unlikely to come out to the desert). (23.01)
2	25	GAR	Remove trash and unauthorized dumps that can be found on roads leading west off of Camp Rock Road, south of Daggett, in Lucerne Valley near the power lines, and throughout critical habitat. (25.01)
2	25	GAR	Institute major clean ups with the critical habitat unit, especially adjacent to roads. (25.02)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Ord-Rodman Critical Habitat Unit			
3	1	HAB	Close targeted abandoned mines that pose a risk to tortoises. (1.01)
3[24]	2	FEN	Construct and maintain tortoise-proof or exclusion fencing along the following freeways, highways and roads within Ord-Rodman: Camp Rock Road. (2.04)
3	6	GRZ	Retire Fisher grazing allotment. (6.01)
3	6	GRZ	Continue grazing on area as long as the ranch operation wishes to remain. While still present, design grazing system to assure harvest of annual flash fuels to reduce fuel hazards in wet years. (6.03)
3	14	WUI	Install and maintain barriers to vehicles and free-roaming dogs in northern Lucerne Valley, at the southern edge of the Ord-Rodman critical habitat. (14.01)
3	16	FIR	Implement grazing management plan within Ord-Rodman with goal of reducing annual grass fuels to reduce fire hazards in tortoise habitat. (16.01)
3	30	OTH	Reduce target shooting and plinking in critical habitat by limiting to designated areas. (30.01)

[24] The County simply lacks the financial resources to do this; given current population levels it is uncertain that this would reduce take. The County would not object to BLM conducting this with their funds. (G. Hillier, San Bernardino County)

NE California Mojave workgroup and Tortoise Conservation Areas therein

The NE CA Mojave workgroup area is composed of five Tortoise Conservation Areas:

1. Mojave National Preserve
2. Ivanpah ACEC
3. Piute-Fenner ACEC
4. Shadow Valley ACEC
5. Death Valley National Park

The workgroup prioritized actions for each of these areas, as well as for the workgroup area as a whole for actions to be implemented across or outside of Tortoise Conservation Areas.

Summary Table of Actions Prioritized by the NE California Mojave Workgroup

Recovery Action (RA) Type from SDSS	RA code	SDSS ranking (workgroup)	# Site-specific Actions Prioritized	# Dissenting Opinions
Restore habitat	HAB	1	9	1
Environmental education	EDU	2	19[1]	3
Decrease predator access to human subsidies	SUB	3	14	
Targeted predator control	PRD	4	9	1
Install & maintain tortoise barrier fencing	FEN	5	6	
Increase law enforcement	LEO	6	8	
Manage disease in wild populations	WDS	7	6	
Withdraw mining	MNG	8	4	
Remove grazing (close allotments)	GRZ	9	3	
Fire management planning & implementation	FIR	10	5	1
Restore roads (e.g., vertical mulching)	RER	11	7	
Install & maintain human barriers (wildland-urban interface)	WUI	12	1	
Manage disease in captive populations	CDS	13	2	
Sign & fence protected areas	SFP	14	4	
Sign designated routes	RTS	15	0	
Install & maintain human barriers (preserves)	PRE	16	0	
Designate & close roads (travel management plan)	TRV	17	1[2]	1

[1] The individual environmental education actions should be consolidated into a coordinated strategy, given a lower priority at this time, and replaced with actions that will clearly address the immediate needs to conserve existing habitat and populations and to reduce threats to eliminate mortality of breeding adults and increase recruitment. (Defenders of Wildlife & Western Watersheds)

[2] BLM and NPS should undertake new off-road vehicle/motorized vehicle route designations within desert tortoise habitat for the purpose of recovery or conservation of the species and its habitat and should apply the regulatory standards to minimize the adverse impacts of off-road vehicle use on public lands and their resources. (Defenders of Wildlife & Western Watersheds)

Recovery Action (RA) Type from SDSS	RA code	SDSS ranking (workgroup)	# Site-specific Actions Prioritized	# Dissenting Opinions
Restore habitat (toxicants/unexploded ordinance)	TOX	18	0	
Minimize wild horse & burro impacts	WHB	19	4	
Speed limits	SPD	20	4	
Connect habitat (culverts/underpasses)	CUL	21	4	
Landfill management	LAN	22	0	
Control dogs	DOG	23	1	
Install & maintain tortoise barriers (open OHV areas)	OOA	24	0	
Land acquisition	ACQ	25	9	
Restore habitat (garbage clean-up)	GAR	26	1	
Other	OTH		4	2

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
NE CA Mojave workgroup area: Actions to be implemented across or outside of Tortoise Conservation Areas			
1[3]	1	HAB	Utilize grazing management practices to improve vegetation conditions that benefit tortoise habitat. (workgroup identifier number: 1.03)
1	2	EDU	Work with NPS, USFWS, BLM, state, and local governments to improve educational materials that can be shown or handed out at visitor centers. (2.01)
1	2	EDU	Establish kiosks in high use areas to inform visitors on how they can protect habitat conditions as well as the animals. (2.02)
1	2	EDU	Implement tortoise education for schools and visitors to the tortoise habitat areas on the impacts of predators and what individuals can do to reduce predation. (2.06)
1	2	EDU	Provide outreach and education to pet owners where domestic tortoises with disease could come in contact with wild tortoises and ensure that domestic tortoises are not released into wild populations. (2.07)
1	2	EDU	Provide outreach and education at NPS and BLM visitor centers for all public that will be using, developing or recreating in tortoise habitat. (2.08)
1	3	SUB	Ensure that landfills are covered and efforts are made to reduce ravens around the sites. (3.01)
1	3	SUB	Reduce coyotes where populations are increasing within or near important desert tortoise habitat. This should be based on monitoring of the coyotes throughout the critical habitat areas. (3.02)
1	3	SUB	Ensure that all garbage collection areas will not attract ravens or other predators that may be in the area. (3.03)
1	4	PRD	Survey for and remove common raven nests on man-made structures such as powerline poles and towers, communication towers, buildings and old mine workings. (4.01)
1	4	PRD	Reduce raven nesting sites in tortoise habitat; reduce raven populations that exceed historic numbers. (4.02)
1	4	PRD	Reduce coyote populations that exceed historic numbers. (4.03)
1	4	PRD	Remove or eliminate specific feral dogs or others as determined through monitoring data. (4.04)

[3] I have seen no research data showing that grazing by domestic livestock or feral burros benefits tortoises. Quite the contrary. There are other problems caused by livestock besides competition for food: deterioration of habitat through trampling, crushing of burrows and small tortoises, attracting ravens and other predators to stock water sites, etc. (Comment received via the March 2013 USFWS Recovery Action Plan Review Survey)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
NE CA Mojave workgroup area: Actions to be implemented across or outside of Tortoise Conservation Areas			
1	6	LEO	Coordinate all federal, state and local law enforcement officers to provide law enforcement coverage for regular and holiday periods throughout the area. (6.01)
1	7	WDS	Develop a disease management plan for the entire workgroup area. Determine the extent of tortoise diseases in the area; determine the source of the diseases that may be found in the area; identify what areas are disease-free; develop a strategy to reduce, eliminate or restrict the source of all identified diseases found in the populations. (7.01)
1	8	MNG	Work with mine owners to ensure that toxic waste is contained and cleaned up when operations are active and upon completion of the mining operations. (8.03)
1	10	FIR	Coordinate fire management actions in tortoise habitat and non-habitat regimes with all state and federal agencies. (10.01)
1	10	FIR	Reduce fine fuels that are capable of igniting and carrying a fire in critical habitat areas. This can be accomplished by applying proper grazing management practices, removing invasive species and conducting immediate rehabilitation practices to eliminate or restrict annual vegetation encroachment after a fire has occurred. (10.03)
1	10	FIR	Train fire staff about guidelines for attacking fire in desert tortoise habitat (as an ongoing process). (10.05)
1	14	SFP	Sign all high use dirt roads within tortoise habitat to assist the user in protecting tortoise and habitat conditions. (14.01)
1	20	SPD	Establish and enforce a 25 mph speed limit on all dirt roads and trails designated as open by BLM within tortoise habitat. (20.01)
1	Other	OTH	Maintain habitat and desert tortoise populations across all habitat linkages within and connecting to the Ivanpah Valley. Priority linkages have been identified by FWS in their comments on the Programmatic Solar Development EIS and Supplement to the Draft EIS that were submitted to BLM. Linkages and desert tortoise populations in this region are threatened by existing and planned large-scale solar energy projects including Ivanpah SEGS (under construction), Stateline (planned), and Silver State South (planned). The key linkage occurs between the Lucy Grey Mountains and Ivanpah Dry Lake and connects populations in the Eldorado and Ivanpah Critical Habitat Units. Sufficient habitat in this key linkage needs to be protected to maintain existing desert tortoise populations and gene flow. (21.01)
1	Other	OTH	Maintain habitat and desert tortoise populations remaining in the California portion of Ivanpah Valley north and west of I-15, especially habitat occurring in a strip along the east boundary of Clark Mountain and west of the Ivanpah SEGS project. (21.02)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
NE CA Mojave workgroup area: Actions to be implemented across or outside of Tortoise Conservation Areas			
1	21	CUL	Install culverts and underpasses under I-15 to prevent isolation of desert tortoise populations in Ivanpah Valley, and especially prevent isolation of the population occurring west of I-15. (This population and its habitat have already been severely compromised by the Ivanpah SEGS project, and additional threats exist because of the proposed Stateline solar project, high speed railroad, gas pipelines and new transmission lines associated with solar energy projects.) (21.03)
2	1	HAB	Implement an invasive plant removal program along roads and restore natural vegetation that will not allow for re-infestation within desert tortoise habitat. (1.01)
2	1	HAB	Create natural conditions that will benefit the tortoise such as water sources, improved forage and habitat connectivity that do not create other potential threats. (1.02)
2	1	HAB	Eliminate livestock grazing and associated grazing allotments on TCAs. Retire the Clark allotment under existing land use plan provisions, and the Jean Lake allotment, which crosses into California and is one of the few active cattle allotments that still overlap a DWMA in California. (1.04)
2	2	EDU	Work with hiking groups and other users to help them educate their members and promote protection measures. (2.04)
2	2	EDU	Create an informative video on protecting tortoise habitat for use at visitor centers and schools. (2.05)
2	2	EDU	Contact the mineral companies for assistance in developing educational programs and provide a presence for protecting and enhancing the tortoise habitat. (2.09)
2	2	EDU	Provide livestock operators with education on tortoises and their habitats. (2.10)
2[4]	2	EDU	Petition livestock operators to assist in educating the land users and provide a presence for protecting the tortoise and their habitat. (2.11)
2[5]	2	EDU	Implement fire management education to reduce human-caused fires and to teach methods that reduce fine fuels such as removal of weed infestation and fine fuels through proper grazing management techniques. (2.12)

[4] This action inappropriately identifies livestock grazing permit holders as providing public education and outreach. Public education and outreach should be undertaken as a lower priority action by trained agency personnel or by individuals with specific knowledge of desert tortoise ecology, behavior, conservation needs, and reasons for its listing under the Endangered Species Act. (Defenders of Wildlife & Western Watersheds)

[5] Livestock grazing was identified as an activity inconsistent with desert tortoise recovery (*cf.* 1994 Recovery Plan, p. 57). The action type, "Removing grazing," should be consistently ranked as a Priority 1 action across all recovery units. (Defenders of Wildlife & Western Watersheds)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
NE CA Mojave workgroup area: Actions to be implemented across or outside of Tortoise Conservation Areas			
2[6]	4	PRD	Work with the livestock operators to assist in the removal of predators where predation is prevalent. (4.05)
2	6	LEO	Establish a volunteer force that will provide a presence and educational source throughout the tortoise range. (6.03)
2	6	LEO	Organize OHV groups, hikers, land owners and outdoor organizations to provide an organized presence and assist in contacting and educating the public. (6.04)
2	8	MNG	Restore natural conditions where mining has taken place (abandoned mines). (8.02)
2	9	GRZ	Where grazing impacts are determined to be detrimental to desert tortoises, work with the livestock operator along with federal and state agencies that administer the land to find the best management practices for eliminating the threat. (9.01)
2	9	GRZ	Remove all grazing in the California Desert Conservation Area boundary as a mitigation program. This should be consistent with HR 2055 and will therefore provide for dedication of the land associated with the donation, including land use restrictions, for the benefit of wildlife. (9.02)
2	10	FIR	Use aerial firefighting tactics to reduce impacts by ground equipment on fragile lands and potential impact to tortoise burrows and habitat conditions. (10.02)
2	13	CDS	Establish a service to assist pet owners in caring for the health of their tortoises and reduce or eliminate diseases in captive populations. (13.01)
2	17	TRV	Plan and implement additional closures of dirt roads and trails within important desert tortoise connectivity or linkage habitats in the Ivanpah Valley and surrounding areas that are not included in the specific ACECs. Consideration should be given to closing roads to public use that are associated with linear utilities such as powerlines, pipelines and communication lines, and roads constructed for communication sites. (17.01)
2	19	WHB	Eliminate burros from the northern Ivanpah Valley associated with the Clark Mountain Herd Management Area. (19.01)
2	21	CUL	Provide culverts on all roads where tortoise barrier fences have been constructed to reduce or eliminate fragmentation of the habitat and allows connectivity to occur. (21.04)

[6] This action inappropriately identified livestock grazing permit holders as providing predator control. Predator control is an activity carried out by trained professionals employed by authorized agencies such as the USDA Wildlife Services. Having grazing permit holders carry out this activity is legally questionable, speculative, and unproven. Furthermore, the action "predator control" lacks specificity on target species, target areas, amount of population reductions, and techniques to be used. (Defenders of Wildlife & Western Watersheds)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
NE CA Mojave workgroup area: Actions to be implemented across or outside of Tortoise Conservation Areas			
2	25	ACQ	Acquire in-holdings within critical habitat and conservation lands to consolidate land-ownership. Targeted lands should be prioritized. (25.01)
2	25	ACQ	Coordinate any proposed purchase or lease of land to enlarge, enhance or provide mitigation for tortoise habitat with the counties and states involved to ensure the tax base is not compromised. (25.02)
2	26	GAR	Organize volunteer groups to assist in removing illegal dumping that has occurred along roadways. (26.01)
2[7,8]	Other	OTH	Population Augmentation/Translocation: 1) Remove tortoises from military maneuver areas, where impacts are unavoidable, and locate them in areas where monitoring data show low populations or disproportionate male/female ratios as well as low potential for other threats; 2) Increase male female ratios by transplanting male tortoises in areas where monitoring data shows there is a need for population survival; 3) Translocate tortoises that are found in areas where surface disturbance is planned to take place to other areas with low threats; 4) Utilize captive, disease free tortoises as a reservoir for future population restocking. (30.02)
3	2	EDU	Interpret all trails that enter or go through tortoise habitat. (2.03)
3	6	LEO	Coordinate federal, state and local officers should to provide mutual assistance to appropriate law enforcement agencies. (6.02)
3	8	MNG	Work with all motorized users of dirt roads found in the area and develop a means to reduce fugitive dust in critical habitat areas where heavy use occurs (Beatley found that heavy vehicle use of dirt roads create fugitive dust that defoliates vegetation). (8.01)
3[9]	10	FIR	Use grazing to reduce fine fuels that can carry wildfire to the extent that it does not eliminate vegetation necessary for tortoise food. (10.04)
3	11	RER	Restore all closed vehicle routes in linkage areas: barricade to prevent motorized vehicle use; vertically mulch or other methods of restoration as appropriate (as per NEMO plan). (11.01)

[7] I don't think this is a scientifically sound recommendation. (Comment received via the March 2013 Recovery Action Plan Review survey)

[8] Translocation is not a recovery action. Translocation is recognized as a measure to minimize the "take" of desert tortoises for purposes of complying with section 9 of the Endangered Species Act. Translocation has not been proven to be effective in augmenting depleted desert tortoise populations. (Defenders of Wildlife & Western Watersheds)

[9] I have seen no research data showing that grazing by domestic livestock or feral burros benefits tortoises. Quite the contrary. There are other problems caused by livestock besides competition for food: deterioration of habitat through trampling, crushing of burrows and small tortoises, attracting ravens and other predators to stock water sites, etc. (Comment received via the March 2013 Recovery Action Plan Review survey)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
NE CA Mojave workgroup area: Actions to be implemented across or outside of Tortoise Conservation Areas			
3	11	RER	Limit roads through linkage areas to those necessary to manage the land uses (as per NEMO plan). (11.02)
3	13	CDS	Provide for shelters and adoption of captive tortoises, and release those found to be disease-free. (13.02)
3	Other	OTH	Establish a coalition of users and land managers to ensure that actions are coordinated, that they have a positive effect on both the tortoise and their habitat and can be implemented economically. This should be in addition to the MOG, DMG and other groups that are not fully focused on tortoise recovery. (30.01)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Mojave National Preserve			
1	2	EDU	Provide outreach and wildland education at NPS and BLM visitor centers on human impacts that can be reduced or eliminated while traveling through or visiting tortoise habitat areas. (workgroup identifier number: 2.01)
1	3	SUB	Work with local communities (*e.g.*, Baker) to control dumpster and garbage subsidies. (3.02)
1	3	SUB	Work with CalTrans to remove garbage/litter along interstates which run through the Preserve. (3.03)
1	4	PRD	Survey for and remove common raven nests from man-made structures including powerline poles and towers, communication towers, buildings, and old mine workings within the Preserve. (4.01)
1	4	PRD	Lethal removal of problem ravens from within the Preserve. (4.02)
1	6	LEO	Effectively control vehicle speeds on Preserve roads through law enforcement, with priority given to critical habitat that supports higher density desert tortoise populations. (6.01)
1	8	FEN	Install and maintain tortoise barrier fencing and pursue road redesign to facilitate reduced road mortality in the highest priority areas where tortoises tend to be on roads in the Preserve. Install culverts for crossing under roads. (8.01)
1	22	DOG	Control free-roaming dogs within the preserve. (22.01)
2	1	HAB	Aggressively control weeds (*Bromus* sp., Sahara mustard, etc.). (1.01)
2	1	HAB	Restore cattle trampled areas, ROWs, abandoned mines with native vegetation tortoise forage. (1.02)
2	3	SUB	Clean roadkill off highways to minimize raven subsidy within the preserve. (3.01)
2	5	GRZ	Where grazing impacts are determined to be detrimental to TCAs and linkage areas, work with the livestock operator along with federal and state agencies that administer the land to find the best management practices for eliminating the threats and providing a mitigation program consistent with existing federal law and regulations. This covers all allotments in the preserve. (5.01)
2	6	LEO	Increase law enforcement or "conservation patrol" presence in high tortoise population areas during periods of high tortoise activity where roads are required for managing the land within the Preserve. (6.02)
2	7	WDS	Develop a disease management plan for the Preserve. Determine the extent of tortoise diseases in the area; determine what is the source of the diseases that may be found in the area; identify what areas are disease free; develop a strategy to reduce, eliminate, or restrict the source of all identified diseases found in the populations. (7.01)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Mojave National Preserve			
2	7	WDS	Ensure that captive tortoises do not escape or are not released deliberately (because captives, in general, have a high incidence of disease) with better signage at the Preserve. (7.02)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Ivanpah ACEC			
1	3	RER	Limit roads through the TCA to those necessary to manage the land uses (as per NEMO plan). (workgroup identifier number: 3.02)
1	4	EDU	Establish kiosks in high use areas (*e.g.*, Nipton, Primm) to inform visitors on how they can protect habitat conditions as well as the animals. (4.01)
1	5	SUB	Monitor all utility lines/towers/corridors and other man-made structures in Ivanpah Valley that pass near the TCA for the presence of raven nests and raven predated desert tortoises. Work with appropriate utilities to remove unoccupied nests and continue to work with Wildlife Services to remove ravens in this area. Some work has already occurred in association with ISEGS, but a more formal, frequent, and consistently funded/implemented program needs to be applied to all lines in and around the TCA. (5.01)
1	5	SUB	Control coyotes and reduce raven populations that exceed historic numbers in northern Ivanpah Valley due to subsidized water and shelter provided by facilities at the Primm resorts and golf course. (5.02)
1	5	SUB	Ensure that all garbage collection areas will not attract ravens or other predators that may be in the Ivanpah area. (5.03)
1	5	SUB	Work with the Primm Casinos and the other associated businesses to install raven-proof dumpsters and trash receptacles. Install educational signs at strategic locations notifying the public of the need to contain all inorganic and organic trash in raven proof containers. (5.04)
2	7	SFP	If not present, signs or kiosks should be installed at any camping or staging areas or TCA boundaries associated with recreational activities (*e.g.*, land sailing on Ivanpah Lake) identifying the sensitive resource values in the TCA. (7.02)
2	12	FEN	Install desert tortoise exclusion fencing along Nipton Road from I-15 to the Nevada Border (possibly beyond). The road is built "at grade", so some design consideration needs to be made for potential washouts. Wildlife undercrossings are also likely to be necessary. (12.01)
2	13	WDS	Develop a disease management plan for the Ivanpah Valley. Determine the extent of tortoise diseases in the area; determine what is the source of the diseases that may be found in the area; identify what areas are disease free; develop a strategy to reduce, eliminate, or restrict the source of all identified diseases found in the populations. (13.01)
2	15	CUL	Maintain culverts for tortoise movement along the rail line that cuts through the TCA. (15.02)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Ivanpah ACEC			
2	21	ACQ	Explore acquisition or exchange Township 16N, Range 15E, Section 36 from a willing seller (is private land or State Lands Commission Land). It is currently unoccupied, given its locations in the heart of the TCA and the potential for renewable energy development. (21.01)
2	21	ACQ	Explore acquisition or exchange Township 16N, Range 14E, Section 36 from a willing seller (is private land and has two or three houses). This land is not associated with the Molycorp Mine properties in the area. Those are further east at the intersection of Nipton Road and Ivanpah Road. (21.02)
2	24	WHB	Remove the remaining burros in the Ivanpah Valley. The Clark Mountain Wild Horse and Burro Management Area is located across Interstate 15 from the TCA. It has been closed under BLMs LUP, but burros continue to occupy the area and there is nothing to prevent their movement under the interstate at Ivanpah Wash. Removal of the remaining burros in the Ivanpah Valley would remove an additional threat from populations that are contiguous with the TCA populations. (24.01)
3	3	RER	Restore all closed vehicle routes in the TCA: barricade to prevent motorized vehicle use; vertically mulch or other methods of restoration as appropriate (as per NEMO plan). (3.01)
3	8	WUI	Install and maintain three-strand, smooth-wire fencing at the interface between the TCA and the towns of Primm and Nipton. (8.01)
3	15	CUL	In combination with desert tortoise exclusion fencing along Nipton Road, install culverts and other underpasses to maintain connectivity between the TCA and the Mojave National Preserve. (15.01)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Piute-Fenner ACEC			
1	2	FEN	Install tortoise barrier fencing and pursue road redesign to facilitate reduced road mortality along approximately 34 miles of Interstate 40 in Piute-Fenner Valley (north side includes approximately 19 miles within the Mojave National Preserve that would be coordinated through the National Park Service). Structures allowing for movement of desert tortoises under the highway (box culverts or bridges) need to be included in the project. (workgroup identifier number: 2.02)
1	4	PRD	Survey for and remove common raven nests from man-made structures such as powerline poles and towers, communication towers, buildings, and old mine workings within the Piute Valley. (4.01)
1	8	RER	Restore all closed vehicle routes in the TCA: barricade to prevent motorized vehicle use; vertically mulch or other methods of restoration as appropriate (as per NEMO plan). (8.01)
1	8	RER	Limit roads through the TCA to those necessary to manage the land uses (as per NEMO plan). (8.02)
1	14	SFP	If not present, signs or kiosks should be installed at any camping or staging areas or TCA boundaries associated with recreational activities identifying the sensitive resource values in the TCA. (14.01)
2	2	FEN	Install tortoise barrier fencing and pursue road redesign to facilitate reduced road mortality along approximately 24 miles of Highway U.S. 95 through Piute Valley from the California border to the intersection with Burlington Northern/Santa Fe Railroad at Arrowhead Junction. Structures allowing for movement of Desert tortoises under the highway (box culverts or bridges) need to be included in the project. This highway should be fenced now rather than wait for it to be expanded to four lanes. The highway is built at grade, and some method would need to be developed to prevent washouts. (2.01)
2	2	FEN	Install desert tortoise exclusion fencing and pursue road redesign to facilitate reduced road mortality along Goffs Road from Fenner to US 95. The railroad follows this road very closely for most of this distance and both the road and railroad could potentially be fenced together except for a short stretch just east of Goffs where the railroad pulls away from the road. I believe that Goffs Road is built at grade, but the railroad is on its uphill side in many areas and it has bridges in several areas to allow for connectivity. Design of the fencing would need to consider the potential for wash-outs. (2.03)
2	6	LEO	Increase law enforcement or "conservation patrol" presence in high tortoise population areas during periods of high tortoise activity where roads are required for managing the land in Piute-Fenner. (6.01)
2	7	WDS	Develop a disease management plan for the Piute Valley. Determine the extent of tortoise diseases in the area; determine what is the source of the diseases that may be found in the area; identify what areas are

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Piute-Fenner ACEC			
			disease free; develop a strategy to reduce, eliminate, or restrict the source of all identified diseases found in the populations. (7.01)
2	15	SPD	Sign as desert tortoise high activity area and enforce a 25 mph speed limit on all dirt roads and trails designated as open to vehicle use within desert tortoise habitat in Piute-Fenner. (15.01)
2	22	ACQ	Explore acquisition or exchange of private lands within the TCA from a willing seller (*i.e.*, private land or State Lands Commission Land). (22.01)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Shadow Valley ACEC			
1	2	EDU	Install and maintain a desert tortoise interpretive information kiosk at the rest area along Interstate 15 at the southern boundary of the DWMA; work with CalTrans. (2.01)
1	2	EDU	Post educational materials and/or install an educational kiosk at the gas station north of the Valley Well Rest Area; work with gas station owner. (2.02)
1	3	FEN	Install desert tortoise barrier fencing to facilitate reduced road mortality on approximately 20 miles of Interstate 15 through Shadow Valley (north side includes about 2.75 miles of private lands that would require easement or in Caltrans ROW; south side includes about 2 miles that would be coordinated through the National Park Service, across NPS-managed land). Fence design should include culverts or underpasses to facilitate movement of Desert tortoises and other species. (3.01)
1	6	SUB	Monitor all utility lines/towers/corridors and other man-made structures in Shadow Valley that pass near the TCA for the presence of raven nests and raven predated desert tortoises. Work with appropriate utilities to remove unoccupied nests and continue to work with Wildlife Services to remove ravens in this area. A formal, frequent, and consistently funded/implemented program needs to be applied to all lines in and around the TCA. (6.01)
1	6	SUB	Survey for and remove common raven nests from man-made structures such as powerline poles and towers, communication towers, buildings, and old mine workings in Shadow Valley. (6.02)
1	6	SUB	Work with the gas station along Interstate 15 about a mile north of the Valley Wells rest area to install raven-proof dumpsters and trash receptacles. Install educational signs at strategic locations notifying the public of the need to contain all inorganic and organic trash in raven proof containers. (6.03)
1	6	SUB	Work with CalTrans to install raven-proof dumpsters and trash receptacles at the Valley Wells rest area. Install educational signs at strategic locations notifying the public of the need to contain all inorganic and organic trash in raven proof containers. (6.04)
1	18	SPD	Sign as desert tortoise high activity area and enforce a 25 mph speed limit on all dirt roads and trails designated as open to vehicle use within desert tortoise habitat in Shadow Valley. (18.01)
2	2	EDU	Install signs on the powerline access road that crosses the DWMA at the point where the access road enters the DWMA on its east and west sides. These signs should indicate that visitors are entering a desert tortoise DWMA. (2.03)
2	4	RER	Restore all closed vehicle routes in the TCA: barricade to prevent motorized vehicle use; vertically mulch or other methods of restoration as appropriate (as per NEMO plan). (4.01)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Shadow Valley ACEC			
2	10	SFP	If not present, signs or kiosks should be installed along Excelsior Mine Road (locations along it just north of Interstate 15) at any camping or staging areas or TCA boundaries associated with recreational activities identifying the sensitive resource values in the TCA. (10.01)
2	20	ACQ	Explore an acquisition or exchange between the BLM and CA State Lands Commission to consolidate BLM management of the DWMA. There are several CSLC lands within the DWMA, and the sole purpose of these lands is to serve as revenue generation for the state. One of the parcels already has several mining claims on it in the northern portion of the DWMA and the potential that these lands could be developed for renewable energy or other purposes warrants an exchange. (20.01)
2	20	ACQ	Explore acquisition or exchange Township 16N, Range 12E, and Section 16 from a willing seller. (20.02)
3	1	HAB	Restore (*i.e.*, seed, plant) the Kern River Gas Transmission Line where it crosses the DWMA. Currently the line is denuded of vegetation. It is a narrow linear corridor, so it may not be high on the list of restoration priorities for the recovery unit, but it is a potential location to implement restoration in Shadow Valley. (1.01)
3	20	ACQ	Explore acquisition or exchange Township 17N, Range 12E, Section 16 from a willing seller (it is crossed by a utility corridor, but a large portion of it is still good habitat). Some of the 20 acre parcels within the section may already be owned by Mojave Desert Land Trust or other conservation groups. (20.03)
3	24	WHB	Continue to eliminate all burros from the ACEC by implementing an additional round-up and prevent recurrence through periodic surveys and selective removals. BLM identified burros in this area as associated with the Clark Mountain herd and also identified there were burro concentration areas in Shadow Valley. (24.01)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Death Valley National Park			
1	4	PRD	Survey for and remove common raven nests from man-made structures such as powerline poles and towers, communication towers, buildings, and old mine workings in the Park. (workgroup identifier number: 4.01)
1	5	LEO	Increase law enforcement or "conservation patrol" presence to enforce 25 mph speed limits on dirt roads within the Park, especially in Greenwater Valley where Desert tortoises are known to occur and that receive higher levels of vehicle traffic during the spring and fall seasons. (5.01)
2	1	EDU	Develop/refine method for reporting tortoise sightings, including method to refine locations and condition of animal. (1.02)
2	1	EDU	Work with Death Valley interpretive staff to develop message and media about tortoises. Include method to report tortoise sightings and need to drive slowly and watch for tortoise in tortoise zones. (1.01)
2	2	HAB	Reduce/eradicate non-native vegetation and restore native vegetation within tortoise habitat in Death Valley NP. (2.03)
2	2	HAB	Within Desert tortoise habitat in the "Nevada Triangle" of the Park, close and restore unnecessary mining roads and prevent future use by motorized vehicles. Old/abandoned mining shafts and prospects should be closed to prevent tortoise entrapment by backfilling, plugging, or fencing. (2.02)
2	6	WDS	Develop a disease management plan for the Death Valley NP. Determine the extent of tortoise diseases in the area (survey to assess demographics and health of tortoises: survey from 1996 found a higher incidence of dead tortoises and remains in the southern part of Death Valley: Owlshead Mountains); determine what is the source of the diseases that may be found in the area; identify what areas are disease free; develop a strategy to reduce, eliminate or restrict the source of all identified diseases found in the populations. (6.01)
2	8	MNG	Acquire patented mining claims occurring in Desert tortoise habitat and reclaim/restore areas disturbed by past mining including open pits, shafts, prospects and roads. The priority areas for this action are the "Nevada Triangle" and northern Greenwater Valley. (8.01)
2	12	WHB	Remove horses and burros from desert tortoise habitat in the Park and prevent their recurrence through boundary fence upkeep and urging BLM to control horse and burros outside the park boundary. (12.01)
2	22	ACQ	Acquire patented mining claims and other private property within desert tortoise habitat in the Park, especially in the Nevada triangle, Greenwater Valley and the bajadas of the Funeral Range in the Amargosa Valley. (22.01)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Death Valley National Park			
3	19	SPD	Sign as desert tortoise high activity area and enforce a 25 mph speed limit on all dirt roads and trails designated as open to vehicle use within desert tortoise habitat in the Park. (19.01)

Colorado Desert workgroup and Tortoise Conservation Areas therein

The Colorado Desert workgroup area is composed of four Tortoise Conservation Areas:

1. Chemehuevi critical habitat unit
2. Chuckwalla critical habitat unit
3. Joshua Tree National Park
4. Pinto Mountains ACEC

The workgroup prioritized actions for each of these areas, as well as for the workgroup area as a whole for actions to be implemented across or outside of Tortoise Conservation Areas.

Summary Table of Actions Prioritized by the Colorado Desert Workgroup

Recovery Action (RA) Type from SDSS	RA code	SDSS ranking (workgroup)	# Site-specific Actions Prioritized	# Dissenting Opinions
Restore habitat	HAB	1	11	
Install & maintain tortoise barrier fencing	FEN	2	11	2
Environmental education	EDU	3	13[1]	1
Decrease predator access to human subsidies	SUB	4	13	
Targeted predator control	PRD	5	2	
Increase law enforcement	LEO	6	5	
Restore roads (e.g., vertical mulching)	RER	7	6	
Manage disease in wild populations	WDS	8	1	
Install & maintain human barriers (wildland-urban interface)	WUI	9	0	
Sign & fence protected areas	SFP	10	3	
Fire management planning & implementation	FIR	11	2	
Withdraw mining	MNG	12	4	
Sign designated routes	RTS	13	3	
Remove grazing (close allotments)	GRZ	14	2	1
Install & maintain human barriers (preserves)	PRE	15	0	
Restore habitat (toxicants/unexploded ordinance)	TOX	16	1	
Manage disease in captive populations	CDS	17	0	

[1] The individual environmental education actions should be consolidated into a coordinated strategy, given a lower priority at this time, and replaced with actions that will clearly address the immediate needs to conserve existing habitat and populations and to reduce threats to eliminate mortality of breeding adults and increase recruitment. (Defenders of Wildlife & Western Watersheds)

Recovery Action (RA) Type from SDSS	RA code	SDSS ranking (workgroup)	# Site-specific Actions Prioritized	# Dissenting Opinions
Designate & close roads (travel management plan)	TRV	18	3[2]	1
Control dogs	DOG	19	3	
Speed limits	SPD	20	0	
Landfill management	LAN	21	1	
Connect habitat (culverts/underpasses)	CUL	22	0	
Install & maintain tortoise barriers (open OHV areas)	OOA	23	0	
Minimize wild horse & burro impacts	WHB	24	1	
Land acquisition	ACQ	25	7	2
Restore habitat (garbage clean-up)	GAR	26	0	
Other	OTH		1	

[2] BLM and NPS should undertake new off-road vehicle/motorized vehicle route designations within desert tortoise habitat for the purpose of recovery or conservation of the species and its habitat and should apply the regulatory standards to minimize the adverse impacts of off-road vehicle use on public lands and their resources. (Defenders of Wildlife & Western Watersheds)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Colorado Desert Workgroup Area: Actions to be implemented across or outside of Tortoise Conservation Areas			
1	1	HAB	Develop an invasive plant species management plan for the desert tortoise habitat within the Colorado Desert recovery unit (e.g. Sahara mustard, buffelgrass). (workgroup identifier number: 1.02)
1	3	EDU	Ensure that Riverside, San Bernardino, and Imperial county, utility, transportation workers (*e.g.*, maintenance railroad/roads crews) have desert tortoise awareness training. (3.07)
1	4	SUB	Work with utility companies to retrofit existing transmission infrastructure to eliminate avian predator subsidies. For new transmission, recommend co-location of facilities, underground lines should be prioritized, and remote lines should be discouraged to the maximum extent. (4.02)
1	4	SUB	Reduce highway road kills as a raven food source by fencing Interstate and state highways to limit animal access. (4.03)
1	5	PRD	Coordinate partners in implementation and re-evaluation of the Raven EA. (5.01)
1	5	PRD	Remove ravens that are known to prey on tortoises where there is evidence of raven predation in tortoise habitat. (5.02)
1	6	LEO	Hire BLM ranger(s) who would be dedicated to patrol the DWMAs for the benefit of tortoise conservation. (6.01)
1	8	WDS	Develop a disease management plan for Colorado Desert Recovery Unit. Determine extent of diseases present in critical habitat units, attempt to identify source, and establish plan to make unit disease-free, or at least with tortoises that while positive are not symptomatic. (8.01)
1	11	FIR	Initiate fire management planning and implementation in tortoise habitat designated for conservation. (11.01)
1	14	GRZ	Close Rice Valley grazing allotment to help protect Chuckwalla to Chemehuevi desert tortoise habitat connectivity. (14.01)
1	Other	OTH	Identify critical linkages between the Chuckwalla and Chemehuevi ACECs. Ensure adequate crossings exist. (22.01)
1[3]	25	ACQ	Acquire in-holdings within critical habitat and conservation lands to consolidate land-ownership. Targeted lands should be prioritized. (25.01)

[3] The County objects to further erosion of the tax base. There is no conflicting use taking place on private land in this area, and some pieces are base properties for the grazing lease. The County would only concur if a way to acquire by exchange with no net loss or with change to PILT formula to treat BLM acquisitions like NPS acquisitions. (G. Hillier, San Bernardino County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Colorado Desert Workgroup Area: Actions to be implemented across or outside of Tortoise Conservation Areas			
1[4]	25	ACQ	Acquire all private in-holdings within the Chemehuevi-Chuckwalla linkage habitat. (25.02)
2	1	HAB	Develop and implement a local native plant seed collection/curation/ nursery program to further restoration efforts in the Colorado Desert; emphasize those plants which are the favored forage for tortoises within the Colorado Desert Recovery Unit. Tier off of BLM's Native Plant Materials Development Program/Seeds of Success, work with Joshua Tree National Park, and other local entities. (1.01)
2	1	HAB	Monitor artificial wildlife water sources for tortoise hazard and injury risks. Upgrade and maintain safety-deficient sources. (1.03)
2	1	HAB	Coordinate with renewable energy project reviewers and project applicants to receive or transplant native desert plants such as beavertail cactus and trees from construction sites to restoration sites. CDFW Lake and Streambed Alteration (LSA) program (Fish and Game Code section 1600 et seq.) together with the California Desert Native Plant Protection Act (Fish and Game Code section 1925-1926) are legal drivers. (1.04)
2	1	HAB	Encourage County Agricultural Commissioners to activate and coordinate with project planners, and collaborate with CDFW to implement the California Desert Native Plant Protection Act. (1.05)
2	3	EDU	Develop and implement a region-wide desert tortoise public education program. (3.01)
2	3	EDU	Add information regarding ravens to BLM kiosks. (3.02)
2	3	EDU	Develop cross-talk forum or newsletter within CDFW and other agencies for tortoise issues such as updates and changes realized by renewable energy projects, habitat conservation, CEQA and other permitting. Collaborate and focus educational exchange between staff of each field office. (3.03)
2	3	EDU	Install separate, freestanding, interpretive kiosks with desert tortoise protection information at Interstate Highway rest areas (*e.g.*, Sand Hills on I-8, Cactus City and Wiley's Well on I-10, and Fenner Valley on I-40). (3.05)
2	4	SUB	Develop and enforce ordinances to ensure a zero-tolerance for subsidies to predators within all towns and cities bordering and adjacent to critical habitat (dumpsters, trash at commercial areas, housing areas, trees used as perches, dog and cat food left outside, stray dogs, pet feeding in yards) coupled with fines. (4.01)

[4] The County has standing objections to further federal land acquisition unless it can be accompanied with either no net loss to property tax revenue or a change in PILT in which BLM acquisitions would be bundled in the same manner as NPS. (G. Hillier, San Bernardino County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Colorado Desert Workgroup Area: Actions to be implemented across or outside of Tortoise Conservation Areas			
2	19	DOG	Inform state, local governmental agencies, special districts, and contractors to control and eliminate feral dogs. Encourage county and state transportation departments, railways, conservation organizations, utility and flood control agencies working in remote areas to collaborate with local or nearest vector/animal control entity. Create reimbursement funding for approved and executed vector/animal control. (19.01)
3	3	EDU	Inform state, local governmental agencies, and special districts to utilize tortoise mobile application tool for encounter education and reporting. (3.04)
3	4	SUB	Check all local and regional landfills for evidence of use by subsidized predators. Develop a zero-tolerance for subsidies to predators at those sites. (4.04)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Chemehuevi Critical Habitat Unit			
1	1	HAB	Initiate control of Saharan mustard along highways, with particular emphasis along US 95 though Chemehuevi. (workgroup identifier number: 1.01)
1	2	FEN	Install and maintain desert tortoise barrier fence and underpasses along unfenced portions of I-40. (2.02)
1[5]	2	FEN	Install and maintain desert tortoise barrier fence and underpasses along Essex Road. (2.03)
1	2	FEN	Install and maintain desert tortoise barrier fence and underpasses along Highway 95. (2.05)
1[6]	3	GRZ	Close the Lazy Daisy grazing allotment to protect desert tortoises and critical habitat. (3.01)
1	5	SUB	Amend the NECO Plan to end the open/closed wash zone system; and specifically designate which washes will remain open for travel in Chemehuevi to reduce roadkill that provides forage for ravens and coyotes. (5.02)
1	12	RTS	Increase signage of open routes throughout Chemehuevi. (12.01)
1	17	TRV	Re-evaluate travel management plan for Chemehuevi to ensure that there are no duplicate routes and that the existing routes have been mapped properly (focus management in area east of Lazy Daisy). (17.02)
1	22	ACQ	Acquire all private in-holdings within Chemehuevi critical habitat unit. Prioritize acquisition of remaining lands in the northern Chemehuevi Valley. (22.01)
2[7]	2	FEN	Install and maintain desert tortoise barrier fence and underpasses along National Trails Highway. (2.04)
2	2	FEN	Install and maintain desert tortoise barrier fence and underpasses along Highways 62. (2.06)

[5] There is little evidence that current traffic load on this highway results in tortoise mortality to justify this expensive fencing. The County lacks the funds to provide for such an action now or in the future. If BLM or NPS wish the road fenced, the County would not object to expenditure of federal funds for this. (G. Hillier, San Bernardino County)

[6] This allotment has existed for many decades and has not been shown to have had a deleterious effect on tortoise populations. Managed grazing can be used to manage vegetation and can contribute to fuel management to reduce the possibility of wildfires. (G. Hillier, San Bernardino County)

[7] There is little evidence that current traffic load on this highway results in tortoise mortality to justify this expensive fencing. Tortoise fencing would adversely impact the historical integrity of this road, which is the old Route 66. The County would want to be fully engaged on this to minimize visual impact. (G. Hillier, San Bernardino County)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Chemehuevi Critical Habitat Unit			
2	5	SUB	Reduce water subsidies for ravens and coyotes in Chemehuevi. Conduct an inventory of guzzles, monitor guzzlers for raven/coyote use. Close, move, or retrofit guzzlers that provide high value to predators; evaluate need for exclusion fencing. (5.01)
2	8	LEO	Coordinate with Tribes to increase enforcement on routes entering their lands. (8.01)
2	24	WHB	Institute a more aggressive burro removal program and a reduction in the limits of the herd size in the Chemehuevi Valley. The feral burros are having an impact on the Chemehuevi Valley tortoise habitat population, as demonstrated through recent data and models. (24.01)
3	2	FEN	Install and maintain desert tortoise barrier fence and over-passes/underpasses along Colorado River Aqueduct. (2.01)
3	2	FEN	Install and maintain desert tortoise barrier fence and underpasses along the ATSF railroad. (2.07)
3	9	RER	Amend the NECO Plan to end the open/closed wash zone system; and specifically designate which washes will remain open for travel. (9.01)
3	22	ACQ	Conduct audit to identify gaps in CDFG land acquisition process and rank potential remedial actions to benefit tortoise. CDFG has mitigation lands in the unit that are not completely acquired, endowment/enhancement fees not utilized, or permittee defaulted on conditions for mitigation lands or fees. (22.03)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Chuckwalla Critical Habitat Unit			
1	2	EDU	Retrofit the informational kiosks, which are at the major entrances into the Chuckwalla DWMA, with updated information on the desert tortoise. (workgroup identifier number: 2.03)
1	2	EDU	Ensure that all agents of the Border Patrol and Military who work within the Chuckwalla DWMA are tortoise trained. There is a high level of use by the Border Patrol in the Chuckwalla DWMA particularly along the Bradshaw Trail. (2.04)
1	3	FEN	Install and maintain tortoise barrier fences and underpasses along Interstate 10. (3.02)
1	7	RER	Continue to restore "Closed Routes" as identified in the NECO Plan with funding from the California OHV grant program and support from the Student Conservation Association. Prioritize closed routes needing restoration based on the USGS habitat model, key linkage areas, and level of use. (7.01)
1	7	RER	Coordinate with Riverside County to reduce berm size on the Bradshaw Trail. (7.02)
1	11	SFP	Continue to sign and fence (preferably with post cable): "Open Routes", "Closed Washes", restoration areas, and DWMA boundaries. (11.01)
1	11	SFP	Replace faded "Do Not Enter" signs for the Chocolate Mountains Gunnery Range along the Bradshaw Trail. (11.02)
1	15	TRV	Re-evaluate travel management plan for Chuckwalla to ensure that there are no duplicate routes and that the existing routes have been mapped properly. (15.02)
1	24	ACQ	Acquire all inholdings in the eastern part of the Chuckwalla critical habitat unit (the Milpitas Wash area) which is heavily checker-boarded in Imperial County. Development is occurring adjacent to this critical habitat placing it at high risk. (24.01)
1	24	ACQ	Consider providing grants for NGO's to use to acquire smaller parcels within the Chuckwalla Bench that are difficult for the BLM to acquire because of the administrative burden. (24.02)
1	24	ACQ	Prioritize land acquisition based on the USGS habitat model and key linkage areas. Target these key acquisition areas with mitigation funding from the solar projects in the Riverside East Solar Energy Zone. (24.03)
2	1	HAB	Map out degraded areas in Chuckwalla using aerial photography. Prioritize areas needing restoration based on USGS habitat model and critical linkage areas. Apply for restoration grants or consider as mitigation for solar projects. (1.02)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Chuckwalla Critical Habitat Unit			
2	4	SUB	Reduce water subsidies for ravens and coyotes in Chuckwalla. Conduct an inventory of guzzlers, monitor guzzlers for raven/coyote use. Close, move, or retrofit guzzlers that provide high value to predators; evaluate need for exclusion fencing. (4.01)
2	4	SUB	Work with local communities (Desert Center and Chiriaco Summit) to reduce predator access to trash and other human subsidies. (4.02)
2	6	LEO	Increase law enforcement presence along the Bradshaw Trail or upper Salt Creek Road where people may be tempted to take desert tortoises when they see them. (6.01)
2	8	TOX	Coordinate with the Navy to clean-up toxicants and/or unexploded ordnance in the portion of the Chuckwalla DWMA on the Chocolate Mountain Aerial Gunnery Range. (8.01)
2	15	TRV	Amend the NECO Plan to end the open/closed wash zone system; and specifically designate which washes will remain open for travel. (15.01)
2	17	MNG	Close key portions (*e.g.*, those areas with USGS habitat model score of 0.7 and above) of the Chuckwalla DWMA from saleable, leasable, and/or locatable minerals. (17.01)
3	1	HAB	Address non-native species (*Brassica tournefortii*) between Chuckwalla and Orocopia mountains and along railroad. (1.04)
3	12	RTS	Continue to sign "Open Routes" as designated in the NECO Plan with funding from California OHV grants. (12.01)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Joshua Tree National Park			
1	1	EDU	Review and update current desert tortoise education programs. Continue to push desert tortoise programs to more students desert-wide. (workgroup identifier number: 1.02)
1	1	EDU	Maintain and expand the NPS desert tortoise education programs to assure that the public's perception on protection and conservation is not limited to the NPS area but extends to wildland throughout the area. (1.03)
1	9	FEN	Evaluate and analyze potential areas that would benefit from tortoise barrier fencing in the Park. (9.01)
2	1	EDU	Integrate new information on disease and implications of releasing captive tortoises into the environmental education program in the Park. (1.01)
2	2	SUB	Decrease coyote access to subsidies at the Cottonwood visitor center. Keeping food inaccessible to these predators and encouraging visitors not to feed them may be important for tortoise survival especially in drought years. Coyote predation on tortoises appears to be extremely high at the Barrow Plot. (2.01)
2	2	SUB	Increase education to visitors about the issues related to feeding wildlife. This needs to occur in the Park as well as communities adjacent to the Park. (2.02)
2	4	LEO	Increase awareness and education of law enforcement rangers about specific ways that their work can increase protections to the desert tortoise. (4.01)
2	5	HAB	Identify priority areas in the park for exotic plant control (*e.g.*, invaded, high quality habitats) with the invasive plant technician (5.01)
2	10	SFP	Expand installation of signage relating to desert tortoise protection to educate more visitors to the Park. (10.01)
2	17	DOG	Address dogs in the WUI areas around the park to eliminate the possibility that dogs become a problem for tortoises in the Park. (17.01)
3	2	SUB	Continue Park-sponsored public service announcements to educate residents about feeding wildlife. (2.03)
3	7	FIR	Update the Fire Management Plan for the Park. (7.01)
3	11	RER	Address illegal incursions into the Park from BLM designated routes that are very close to the park by restoring unauthorized incursions and/or closed routes using methods such as vertical mulching. (11.01)
3	13	MNG	Remedy problem mine sites that have the potential to harm tortoises. (13.01)

RIT Priority	SDSS RA type rank	RA code	Area of Interest & Specific Actions
Pinto Mountains ACEC			
1	1	MNG	Withdraw the Pinto Mountains ACEC from mineral entry because of its small size and key location between Chemehuevi and Joshua Tree. (workgroup identifier number: 1.01)
1	2	HAB	Restore redundant routes within the Pinto Mountains ACEC. (2.04)
1	3	FEN	Inventory mine shafts and other hazards from past mineral development and extraction and fence those shafts which constitute hazards to tortoises (and humans). Any safety fencing should be installed to prevent tortoise access. (3.01)
1	3	FEN	Install and maintain tortoise barrier fencing along Highway 62. (3.02)
1	10	LAN	Reduce subsidies to ravens from operations at the transfer station. (10.01)
1	11	RER	Identify and restore closed and unauthorized routes in the Pinto Mountains area. (11.01)
1	11	RER	Identify potential reasons for the proliferation of unauthorized routes in a given area (*i.e.*, existing mining claims, private inholdings) within the Pinto Mountains and try to ameliorate them. (11.02)
1	14	RTS	Sign designated routes in Pinto Mountains to ensure proper adherence to routes. Routes in the area have recently been identified and designated. (14.01)
2	1	MNG	Mitigate abandoned mines/claims with dangers to tortoises in the Pinto Mountains ACEC. (1.02)
2	2	HAB	Conduct habitat restoration in areas disturbed by mineral extraction. (2.03)
2	4	EDU	Increase environmental education in Pinto Mountain through a BLM and NPS partnership to assist each other in protecting this area. (4.01)
2	5	SUB	Decrease predator access to subsidies at active mines within Pinto Mountains. (5.01)
2	5	SUB	Reduce water subsidies for ravens and coyotes in Pinto Mountains. Conduct an inventory of guzzlers, monitor guzzlers for raven/coyote use. Close, move or retrofit guzzlers that provide high value to predators; evaluate need for exclusion fencing. (5.02)
2	7	LEO	Increase law enforcement presence in Pinto Mountain through a BLM and NPS partnership to assist each other in protecting this area. (7.01)
3	4	EDU	Increase environmental education to assure no releases of captive tortoises in Pinto Mountains from the nearby urban population with captives in backyards. (4.01)
3	21	DOG	Aggressively remove feral dogs from throughout the Pinto Mountains area. (21.01)

Other Site-Specific Actions Proposed by RIT members

The recovery actions listed in this section were proposed during the action planning process but were not placed in priority categories 1 through 3 by the RIT workgroup. Actions may also be included here because it was decided by the team that, at this time, the action did not warrant prioritizing during the current 5-year planning period.

West Mojave Workgroup

Priority Category Decision	SDSS RA Type	RA code	Area of Interest & Specific Actions
Fremont-Kramer Critical Habitat Unit & DTRNA			
N/A	1	HAB	Protective fencing and facilitated recovery by mechanized means and planting. (workgroup identifier number: 1.05)

NE CA Mojave Workgroup

Priority Category Decision	SDSS RA Type	RA#*	Area of Interest & Specific Actions
Mojave National Preserve			
N/A	5	GRZ	Remove grazing from the Colton Hills allotment, which is in tortoise habitat. Private land base property associated with this allotment should be acquired. Keep in mind that the NPS does not have legal authority to close grazing in the Preserve as it is part of our legislation. (workgroup identifier number: 5.05)
N/A	10	RER	Rip and disc closed vehicle routes in the Preserve to relieve soil compaction; barricade to prevent motorized vehicle use. (10.01)
N/A	10	RER	Limit roads through critical habitat areas in the Preserve to those necessary to manage the land uses. (10.02)
N/A	21	SPD	Work with San Bernardino County on establishing speed controls and strongly consider tortoise barrier fencing along Ivanpah Road and Morning Star Mine Road roads, if monitoring indicates vehicle mortality is an issue within this critical habitat area. Vehicle speeds on paved roads within the Preserve appear excessive in some areas, especially in Ivanpah Valley on Ivanpah Road and Morning Star Mine Road. (21.01)
Ivanpah ACEC			
N/A	2	GRZ	Eliminate livestock grazing and associated grazing allotments in the ACEC. Retire the Jean Lake allotment under existing land use plan provisions. The Jean Lake allotment, which crosses into California, and is one of the few active cattle allotments that still overlaps a TCA in California. This allotment is currently inactive, so defer action until allotment is activated and require restrictions, *e.g.*, seasonal use. (2.01)

N/A	7	SFP	Install and maintain additional three-strand fencing (to alert the public that they are in a sensitive area) along Nipton Rd. where you enter the ACEC; could be tied in with desert tortoise exclusion fencing. (7.01)
N/A	11	LEO	Increase "conservation patrol" presence in Ivanpah in high tortoise population areas. (11.01)
N/A	12	FEN	Install desert tortoise exclusion fencing along the eastern side of Interstate 15 from Ivanpah Dry Lake south towards Mountain Pass. Stop fencing at 5,000 feet elevation. Several undercrossings already exist under I-15, so wildlife undercrossings are probably not needed. (Brightsource for mitigation.) (12.01)
N/A	20	SPD	Establish and enforce a 25 mph speed limit on all dirt roads and trails designated as open to vehicle use in the ACEC. (20.01)
Piute-Fenner ACEC			
N/A	19	TRV	Close all washes to motorized vehicle use and effectively barricade to prevent trespassing within Piute-Fenner. Desert tortoises spend considerable time in washes because they facilitate movement, contain greater forage and cover, and their banks are often favored sites for burrowing. (19.01)
N/A	19	TRV	Reduce motorized vehicle route density in the ACEC to promote Desert tortoise recovery. Existing level of designated open vehicle routes provides redundant access across the ACEC. (19.02)
N/A	24	GRZ	Where grazing impacts are determined to be detrimental to TCAs and linkage areas, work with the livestock operator along with federal and state agencies that administer the land to find the best management practices for eliminating the threats and providing a mitigation program consistent with existing federal law and regulations. Covers all allotments in the ACEC. (24.01)
Shadow Valley ACEC			
N/A	19	CUL	Install new box culverts or underpasses along existing highways where habitat connectivity has been lost within Shadow Valley. (19.01)
Death Valley National Park			
N/A	17	TRV	Close and restore abandoned and unnecessary dirt roads associated with mining activity in the Nevada Triangle and Greenwater Valley. (17.01)
N/A	7	FIR	Control all fires in Desert tortoise habitat using practices that minimize loss of natural vegetation communities, and confine all motorized vehicles used in fire control and suppression to existing dirt and paved roads. Allow no cross-country vehicle use in fire suppression activities. (7.02)
N/A	7	FIR	Stage response staff and equipment closer to sensitive areas. (7.01)

D. TRACKING & MONITORING PLAN

Reporting requirements for recovery action implementation and maintenance

Implementation and maintenance reporting is vital for tracking what has been undertaken for recovery of the desert tortoise, as well as for assessing effectiveness of actions at the tortoise conservation area level. For each action undertaken, the location, type, area and/or number of activities undertaken should be reported each year. In out-years, status updates of on-going actions should be reported (*e.g.*, locations of visual inspections and repairs). RIT members will use a forthcoming Desert Tortoise Recovery Action Tracking Database to upload spatial data or draw the footprint of implemented actions.

Plan for supporting monitoring and research to assess action effectiveness

Overall Recovery Action Plan Effectiveness Monitoring. The large number of potential recovery/ mitigation actions in any portion of the desert reflects the reality that Mojave desert tortoises are impacted by many activities of potentially greater or lesser effect. Reasonable documentation of these multiple impacts and the effectiveness of ameliorating those impacts has been elusive for reasons related to the biology of the desert tortoise, such as the fact that tortoises are long-lived and many threats have chronic effects. Also, survivorship of adults is relatively high, and therefore a very slight predicted improvement in survivorship would require extensive and intensive monitoring. Finally, juveniles are cryptic with high mortality rates, making documentation of their occurrence, let alone survival, extremely difficult. The Desert Tortoise Science Advisory Committee has advised that effectiveness of on-the-ground recovery actions for desert tortoise recovery, in general, be assessed using data from the range-wide monitoring program, emphasizing increasing ability to detect regional population trends rather than fine-scaled population responses to individual actions. Population abundance is an accepted metric of overall population response to both continuing threats and to successful recovery actions, which is why both recovery plans to date for the desert tortoise have included a recovery criterion calling for evidence of increasing population trends. In addition, a commitment to the measurement of an overall population response is a necessary prerequisite to the desert tortoise being delisted and relief from regulatory burdens of the Endangered Species Act. Because multiple recovery actions for multiple projects are expected to be implemented in the same tortoise conservation area, using distance sampling to describe changes in abundance within tortoise conservation areas is the appropriate success measure for recovery actions prioritized and implemented based on the SDSS ranking system.

Estimated annual support required for the range-wide monitoring program at optimal level in each sampling area within the California Mojave RIT area is listed below. This effort is subject to ongoing evaluation and revision of the range-wide sampling strategy.

West Mojave Workgroup Areas
Ord-Rodman: ~$60,000/year
Superior-Cronese: ~$138,000
Fremont-Kramer: ~$109,000

NE CA Mojave Workgroup Areas
Ivanpah: ~$118,000
Fenner: ~$109,000

Colorado Desert Workgroup Areas
Pinto Mountains: ~$36,000
Joshua Tree National Park (non- critical habitat): ~$55,000
Chuckwalla: ~$182,000
Chemehuevi: ~$182,000
Chocolate Mountain AGR: ~$60,000

Monitoring for the effectiveness of specific recovery action types. Focused effectiveness monitoring and/or research for particular actions are still important to improve understanding of threats or actions for which greater uncertainty or controversy exists. Extremely well-designed, implemented, and coordinated research studies will be required to accurately describe recovery action effectiveness in these cases. Research requires replication and standardization of procedures. Best research practices also require that effectiveness metrics are measurable within a reasonable timeframe. Potentially**,** an effectiveness monitoring/research fund (*e.g.*, managed by the National Fish and Wildlife Foundation) should be established from which experimental effectiveness monitoring efforts would be coordinated at a larger scale.

In conjunction with prioritizing recovery actions in this document, the RITs prioritized needs for effectiveness monitoring or research. Each workgroup developed priorities for management actions and effectiveness monitoring/research for their workgroup area that they felt warrant such an experimental approach in each workgroup area.

West Mojave Workgroup

Priority Effectiveness Monitoring and/or Research Topics	RA code	SDSS RA Type rank
Continue research on infectious diseases and their spread to address topics essential to recovery of the tortoise (*e.g.*, spread in the Daggett area).	WDS	16
Monitor effectiveness of targeted predator control (*i.e.*, Raven/Canid) in areas with existing data (*e.g.*, DTRNA, EAFB). The measure of effectiveness will be the decrease in mortality and increase in juvenile tortoise population and recruitment of juveniles in the adult population.	PRD	6
Monitor effectiveness of maintaining/obscuring route closures.	RER	7
Monitor effectiveness of horizontal and vertical mulching for the return of native vegetation and improving tortoise habitat.	RER	7
Monitor effectiveness of actions to decrease predator access to subsidies.	SUB	4

Monitor effectiveness of environmental education efforts, such as government-funded brochures, costumes for out-reach events, numerous out-reach events, posters, public service announcements, videos, websites, and all sorts of educational materials (*e.g.*, Colorado State University report phase 2).	EDU	2
Monitor effectiveness of park rangers, BLM rangers, and CDFW wardens hired for tortoise recovery implementation.	LEO	9
Identify and prioritize areas with potential as climate change refugia, (*i.e.*, areas that will remain stable habitat over time based on climate change scenarios).		

NE CA Mojave Workgroup

Priority Effectiveness Monitoring and/or Research Topics	RA code	SDSS RA Type rank
Monitor effectiveness of environmental education efforts and techniques.	EDU	2
Desert tortoise monitoring: implement monitoring capable of determining fluctuations in population (range-wide LDS, plus study plots).		
Monitor effectiveness of population augmentation methods. Fully support tortoise research facility in Mojave National Preserve to better understand headstarting/population augmentation. Begin population augmentation for collapsed populations (*e.g.*, Goffs).		
Disease: determine the source of cutaneous dyskeratosis (CD).These should be rangewide studies conducted by the USGS.	WDS	7
Tortoise Surveys and Monitoring: determine extent of tortoise distribution and population structure; refine distribution model for Death Valley NP.		
Monitor effectiveness of installing tortoise barrier fencing; determine where tortoises tend to be on paved roads, fence those roads, monitor the effect of the fencing.	FEN	5
Disease: determine if the tortoises have the URTD disease, its spread and impact on the population. These should be rangewide studies conducted by the USGS	WDS	7
Habitat Restoration-Wildfire: determine habitat impacts from past wildfire burns and develop methods to restore vegetation conditions and reduce future fire occurrences	HAB	1
Monitor effectiveness of grazing removal: conduct studies in the grazing allotments that have had grazing retired to determine if there are any benefits that have occurred to the tortoise and their habitat.	GRZ	9
Drought and Climate Change: determine the adaptability of the tortoise to deal with drought and the fluctuating climate conditions.		

Colorado Desert Workgroup

Priority Effectiveness Monitoring and/or Research Topics	RA code	SDSS RA Type rank
Monitor effectiveness of Sahara mustard control methods. Monitor effects of Sahara mustard infested areas on tortoises (specifically Chuckwalla).	HAB	1
Monitor effectiveness of designating and closing roads for recovery of tortoise populations.	TRV	18

Monitor effectiveness of installing tortoise barrier fencing for recovery of tortoise populations.	FEN	2
Monitor effectiveness of using culverts/underpass to connect habitat and maintain genetic connectivity.	CUL	22
Monitor effectiveness of habitat restoration methods.	HAB	1
Monitor effectiveness of environmental education efforts for recovery of tortoise populations.	EDU	3
Monitor effectiveness of land acquisition for recovery of tortoise populations.	AQC	25
Monitor effectiveness of wind and solar energy development, operation, and decommissioning on desert tortoises, both local and regional. (Additional priority research question for the Colorado Desert proposed by Jeff Lovich, who was unable to attend the 2012 in-person RIT meeting.)		

E. NEXT STEPS

The relevant land management agencies will use their own processes to implement priority actions, research and monitoring. The necessary planning processes (*e.g.*, NEPA where appropriate) will be engaged to formalize each agency's commitments to the adopted actions. The recovery action plans will also be available for agencies to use to identify priority mitigation actions for projects impacting desert tortoise habitat or populations within the relevant workgroup area. Implementation and monitoring will be tracked using online tools and collaboration among workgroup members.