

Decision Record and Rationale for
(DOI-BLM-NV-S010–2014–0112-DNA) – *Stump Spring Tortoise*
Translocation

Based on Environmental Assessment DOI-BLM-NV-S010–2012–0097–EA
Desert Tortoise (*Gopherus agassizii*) Translocation Throughout the Species
Range within Southern Nevada District and Caliente Field Office

Decision:

BLM will authorize the U.S. Fish and Wildlife Service Desert Tortoise Recover Office (DTRO) to translocate desert tortoises, both adults and an equal number or fewer juveniles, to the Stump Spring area of Clark County as described in the proposed action (DOI-BLM-NV-S010–2014–0112-DNA) in Fall of 2014. The number of adults to be translocated will be based on Fall 2014 surveys of the resident tortoise population in the area that will take place before the translocation. Based on the results of that survey, the final tortoise population of resident tortoises plus translocated adults will not exceed 3.3 adult tortoises per square kilometer.

Rationale:

1. This decision of the current proposed action is consistent with the Las Vegas Resource Management Plan (RMP) and Record of Decision (ROD) approved in 1998 as it in conformance with the following management actions in RMP and ROD.
 - FW-2. Re-establish native fauna (including naturalized species) to historic habitat and improve population numbers in current use areas.
 - FW-2–a. Cooperate with State and Federal wildlife agencies in implementing introductions, reintroduction, and augmentation releases of native and/or naturalized species (such as desert bighorn sheep, and chukar).
 - SS-3. Manage desert tortoise habitat to achieve the recovery criteria defined in the Tortoise Recovery Plan and ultimately to achieve delisting of the desert tortoise.
 - SS-3–a.c. Implement inventory, monitoring, and research projects dealing with management issues within desert tortoise areas of critical environmental concern.
 - SS-4. Encourage the obtainment and dissemination of knowledge regarding the Mojave Desert ecosystem including desert tortoise biology.
2. The current proposed action falls under the programmatic tortoise translocation proposed action analyzed in the existing Environmental Assessment (EA) DOI-BLM-NV-S010–2012–0097–EA and is within the same analysis area. The current proposed action meets the criteria required for translocation sites as analyzed under DOI-BLM-NV-S010–2012–0097–EA.
3. The range of alternatives as analyzed in DOI-BLM-NV-S010–2012–0097–EA is appropriate with respect to the current proposed action and any new information or circumstances would not substantially change the analysis of the new proposed action.

4. Direct, indirect, and cumulative effects that will result from implementation of the new proposed action area are similar (both quantitatively and qualitatively) to those analyzed in) DOI-BLM-NV-S010–2012–0097–EA and public involvement and interagency reviews associated with the DOI-BLM-NV-S010–2012–0097–EA and the site specific translocation plan are adequate for the current proposed action.

Mitigation Measures:

Mitigation measures were provided for in the original EA and shall become stipulation for this new action and shall be implemented to reduce impacts. The stipulations are as follows:

Tortoise Stipulations

1. Follow USFWS DTRO guidance for translocation site selection, disease testing, genetic testing, survey protocols, handling, and monitoring techniques.
2. Speed limit of 25 mph will be maintained on all unposted dirt roads.
3. Workers will be instructed to check underneath all vehicles before moving them as tortoises often take cover underneath parked vehicles.
4. Tortoise burrows, if needed, will be constructed outside wilderness and wilderness study areas.

Other Stipulations

1. All vehicles will be cleaned prior to entering the area, as well as after they are removed from the area to prevent the spread of noxious weeds.
2. Fire restrictions will be upheld.
3. Applicant must not disturb archaeological and historical sites, including, but not limited to, petroglyphs, ruins, historic buildings, and artifacts. Any cultural artifacts inadvertently discovered during permitted operations must be left in place.
4. All motorized vehicles are restricted to existing roads.

Finding

Based on the Environmental Assessment (DOI-BLM-NV-S010–2012–0097–EA), which includes a Finding of No Significant Impact (FONSI) and Decision Record, and the attached Determination of NEPA Adequacy (DNA) (DOI-BLM-NV- S010–2014–0112-DNA), I have determined that the EA DOI-BLM-NV-S010–2012–0097–EA is adequate, and that the impacts are not expected to be significant.

Appeal or Protest Opportunities:

This decision may be appealed to the Interior Board of Land Appeals (IBLA), Office of the Secretary, in accordance with the regulations contained in 43 CFR Part 4 and Form 1842–1. If an appeal is taken, your notice of appeal must be filed in this office within 30 days of the

decision. The appellant has the burden of showing that the decision appealed from is in error.

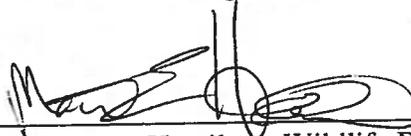
If you wish to file a petition pursuant to regulation 43 CFR 2801.10 or 43 CFR 2881.10, for a stay of the effectiveness of this decision during the time that your appeal is being reviewed by IBLA, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the IBLA and the appropriate office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof in demonstrating that a stay should be granted.

Standards for obtaining a stay

Except as otherwise provided for by law or other pertinent regulations, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied.
2. The likelihood of the appellant's success on the merits.
3. The likelihood of immediate and irreparable harm if the stay is not granted, and
4. Whether the public interest favors granting a stay.

Recommended by:



Mathew Hamilton, Wildlife Biologist

8/15/14

Date

Approved by:



Shonna Dooman
Assistant Field Manager Resources, BLM Las Vegas Field Office

8/15/14

Date

Determination of NEPA Adequacy (DNA) Worksheet

U.S. Department of the Interior
Bureau of Land Management (BLM)

OFFICE:: Las Vegas Field Office, LLNVS00520

TRACKING NUMBER: DOI-BLM-NV-S010-2014-0112-DNA

CASEFILE/PROJECT NUMBER: NA

PROPOSED ACTION TITLE/TYPE: Stump Spring Tortoise Translocation

LOCATION/LEGAL DESCRIPTION: Stump Spring portion of Pahrump Valley, south of State Route 160, west of Sandy Valley Road, east of Tecopa Road.

APPLICANT (if any): U.S. Fish and Wildlife Service (FWS) Desert Tortoise Recovery Office (DTRO)

A. Description of Proposed Action and any applicable mitigation measures

The FWS is planning on translocating adult and juvenile tortoises from the Desert Tortoise Conservation Center (DTCC) to the Stump Spring area (Pahrump Valley area south of State Route 160 between Sandy Valley Road and Tecopa Road) to help augment the tortoise population in the area. The detailed translocation plan is attached.

B. Land Use Plan Conformance

LUP Name	Las Vegas Resource Management Plan (RMP)	Date Approved:	1998
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The proposed action is in conformance with the applicable LUP because it is specifically provided for in the following LUP decisions:

FW-2. Re-establish native fauna (including naturalized species) to historic habitat and improve population numbers in current use areas.

FW-2-a. Cooperate with State and Federal wildlife agencies in implementing introductions, reintroduction, and augmentation releases of native and/or naturalized species (such as desert bighorn sheep, and chukar).

SS-3. Manage desert tortoise habitat to achieve the recovery criteria defined in the Tortoise Recovery Plan and ultimately to achieve delisting of the desert tortoise.

SS-3-a.c. Implement inventory, monitoring, and research projects dealing with management issues within desert tortoise areas of critical environmental concern.

SS-4. Encourage the obtainment and dissemination of knowledge regarding the Mojave Desert ecosystem including desert tortoise biology.

C. Identify applicable National Environmental Policy Act (NEPA) documents and other related documents that cover the proposed action.

List by name and date all applicable NEPA documents that cover the proposed action.

This action is tiered to the following Environmental Assessment (EA):

Desert Tortoise (*Gopherus agassizii*) Translocation Throughout the Species Range within Southern Nevada District and Caliente Field Office (DOI-BLM-NV-S010–2012–0097–EA)
Signed 1/31/2013

The FWS determined that the programmatic biological opinion, as amended (Service File Number 2013-F-0273), issued to the FWS DTRO for issuance of desert tortoise recovery permits adequately analyses and minimizes or mitigates anticipated effects of tortoise releases on BLM land. This amended programmatic biological opinion fulfills BLM’s responsibilities for interagency consultation established in section 7(a)(2) of the Endangered Species Act (ESA).

D. NEPA Adequacy Criteria

1. Is the new proposed action a feature of, or essentially similar to, an alternative analyzed in the existing NEPA document(s)? Is the project within the same analysis area, or if the project location is different, are the geographic and resource conditions sufficiently similar to those analyzed in the existing NEPA document(s)? If there are differences, can you explain why they are not substantial?

The Stump Spring Translocation Plan is encompassed by and thus a feature of the proposed alternative in the Desert Tortoise Translocation EA (DOI-BLM-NV-S010–2012–0097–EA). That EA analyzed potential translocation of tortoises through the Southern Nevada District which includes the proposed Stump Spring project area. In the EA, potential translocation sites were those areas that met seven different selection criteria. The following table shows how the Stump Spring project fits within these criteria based on information from the Stump Spring Translocation Plan.

Table 1. Summary of selection criteria for Eldorado Valley

Criteria	Yes-No	Stump Spring site characteristics
1. Habitat within 175 km of DTCC	Y	40 km
2. BLM lands below 1,677m	Y	majority of site is 800–900m, eastern end increases to 1,500m
3. Preference given to protected areas (e.g. Areas of Critical Environmental Concern (ACEC))	N	Similar to Trout Canyon area analyzed in the Programmatic EA, the Stump Spring translocation site is not within an ACEC and is outside of designated critical habitat, but it does lie within a block of contiguous desert tortoise habitat that may be valuable for population connectivity
4. Within USGS Tortoise habitat model categories 0.6–1 (scale runs from 0–poor habitat to 1–highly suitable habitat)	Y	0.8–1
5. Fenced highways	Y	Hwy 160 is fenced from Trout Canyon Rd to Lovell Canyon Rd
6. Depleted tortoise populations	Y	2.9 tortoises / km ² based on past surveys in the Pahrump Valley as a whole (see translocation plan for further discussion, additional surveys will be done in Fall 2014, before translocation, to provide a more recent estimate)
7. Known health status of resident wild tortoises	Y	<i>Mycoplasma</i> has been identified in the regional population during past surveys. Health assessments on resident tortoises will be performed prior to the translocation project.

2. Is the range of alternatives analyzed in the existing NEPA document(s) appropriate with respect to the new proposed action, given current environmental concerns, interests, and resource value?

The Desert Tortoise Translocation EA (DOI-BLM-NV-S010–2012–0097–EA) analyzed potential translocation of tortoises throughout the Southern Nevada District which includes the proposed Stump Spring project area. Thus, the range of alternatives in the EA are appropriate for the Stump Spring translocation project.

3. Is the existing analysis valid in light of any new information or circumstances (such as, rangeland health standard assessments, recent endangered species listings, updated lists of BLM sensitive species)? Can you reasonably conclude that new information and new circumstances would not substantially change the analysis of the new proposed action?

The analysis in the EA is still valid and no new information is available that would lead to a different analysis. While translocation during drought conditions was not expressly analyzed in the EA, the site specific translocation plan discusses that recent research has shown that survival of translocated tortoises is similar to non-translocated tortoises even under drought conditions. Thus the analysis presented in the EA would still be valid even under drought conditions.

4. Are the direct, indirect, and cumulative effects that would result from implementation of the new proposed action similar (both quantitatively and qualitatively) to those analyzed in the existing NEPA document?

The direct, indirect, and cumulative effects from the Stump Spring translocation are similar to those analyzed in the EA because the EA’s cumulative impacts analysis covered potential tortoise translocations throughout the district, which includes Stump Spring.

5. Are there public involvement and interagency reviews associated with existing NEPA document(s) adequate for the current proposed action?

The public involvement and interagency reviews of the EA and the Stump Spring Translocation Plan are adequate. The BLM had a comment period for the draft EA from August 15 to October 31, 2012. BLM also presented information on the EA at Town Board meetings in Bunkerville, Moapa, Goodsprings, Searchlight, Las Vegas, Indian Springs, Mesquite, Pahrump, Amargosa Valley, Alamo, and Caliente. BLM received over 230 written comments and the EA was revised based on the comments. The final, signed EA was then available for a 30 day appeal period during which no appeals were filed.

As required in the EA, the Stump Spring Translocation Plan was also made available for public comment from June 27, 2014 until July 28, 2014. Five letters with comments were received on the Stump Spring plan during the comment period. Based on the comments in the five letters, the translocation plan was updated to clarify the proposed project.

The following were the main concerns raised in the five comment letters along with BLM’s response.

Table 2. Public Comments and BLM Response

Comment/Concern	BLM Response
<i>Several commenters raised concerns about not being directly notified about the availability of the Stump Springs Translocation Plan for public comment.</i>	While the BLM is not required to directly notify parties, BLM will continue to try to improve its outreach to the public on future translocation plans. Each commenter will be directly notified of the availability of the Decision Record for the Stump Springs Translocation Plan for a 30-day appeal period. BLM will develop a list of commenters on the individual tortoise translocation plans and notify the commenters directly on any future translocation plans.

<p><i>One commenter pointed out that the incorrect EA number was cited on the draft translocation plan cover page.</i></p>	<p>The translocation plan was corrected to include the current, programmatic EA rather than the 2005 EA.</p>
<p><i>Several commenters stated that to be in compliance with NEPA, the Stump Springs Translocation Plan should be analyzed in its own Environmental Assessment (EA).</i></p>	<p>A project-specific NEPA review of the Stump Springs Translocation Plan was done through a Determination of NEPA Adequacy (DNA) that is tied to the Programmatic Translocation Environmental Assessment (EA). The Programmatic Translocation EA was determined to have adequately analyzed the impacts of translocations such that a new full EA would not be required.</p>
<p><i>One commenter stated that the BLM has not consulted with the FWS on the Stump Springs Translocation Plan as required under the ESA.</i></p>	<p>The BLM has conferred with the FWS that the biological opinion issued to the FWS DTRO does cover the Stump Springs Translocation project and thus meets the requirements under the Endangered Species Act.</p>
<p><i>Several commenters raised concerns about the possibility of future utility (transmission lines) development in the area and requested more information on the status of the designated utility corridors in the area.</i></p>	<p>The two designated utility corridors (1998 RMP corridor, Energy Policy Act of 2005 corridor) that pass through the proposed translocation area are both currently undeveloped except for a single transmission line that passes through the 1998 RMP corridor at the eastern end of the translocation area. This transmission line leaves the corridor as the corridor turns more due west; instead, the line continues to the northwest where it crosses State Route 160 and then continues west on the north side of SR160 to Pahrump. There is another small transmission line that runs north to south through the translocation area from a substation on the north side of SR 160 south to Sandy Valley, mostly paralleling Sandy Valley Road. A small distribution line ties into this north-south line and heads east into the Spring Mountains. The status of the designated corridors throughout the Las Vegas and Pahrump Field Offices, including the two through this area, is being analyzed as part of the ongoing RMP revision process. BLM cannot predict the location of or how many future transmission lines might be developed through this area as this would be purely speculative. Future lines will have to go through NEPA analysis and any impacts to tortoises in the area will have to be analyzed. Upon translocation, translocated tortoises will be treated as resident tortoises during future NEPA analyses.</p>
<p><i>One commenter requested more information on the current and potential future uses in the area.</i></p>	<p>Current uses within the area have been disclosed in the plan, and impacts of these current uses would be the same for resident and translocated tortoises. While some potential future uses in the area (solar applications, mining claims) are disclosed in the plan, description of other potential future uses would be purely speculative. Any future use in the area would have to go through NEPA analysis and section 7 ESA consultation to address any direct, indirect, and cumulative impacts to the tortoises in the area. Upon translocation, translocated tortoises will be treated as resident tortoises during future NEPA analyses.</p>
<p><i>Several commenters raised concerns about how the proposed translocation relates to the pending solar applications in the area.</i></p>	<p>The solar ROW applications are simply pending applications, all of which have been pending since 2011 or earlier. The applications still have to be processed, including being analyzed under NEPA, before a decision on whether or not to grant a ROW is made. None of the applications are currently being actively processed or analyzed under NEPA by the BLM. As with any application, until such time as a ROW is actually granted, the BLM will continue to manage the resources in the area as required in BLM manuals, policies, and regulations. During NEPA analysis of the applications, potential impacts to tortoise would be analyzed. Upon translocation, translocated tortoises will be treated as resident tortoises during future NEPA analyses. As stated in the Programmatic Translocation EA, translocation of tortoises to the area would not by itself exclude solar as a potential land use in the area.</p>

<p><i>One commenter stated that the Stump Springs Translocation Plan does not disclose the existence of a nearby wind application and an additional solar application.</i></p>	<p>The wind application mentioned is approximately 9 miles away from the proposed release zone on the top of Table Mountain, and the solar application mentioned is approximately 6 miles west of the proposed release zone. Based on the distances translocated tortoises would have to move and the terrain they would have to cross to reach the application areas, it was decided that disclosing the existence of these two applications would not provide any value to the translocation plan as it is anticipated a very small proportion of the translocated tortoises would move more than 6.5 km (4.0 miles).</p>
<p><i>One comment expressed concern over a potential heat-sink effect, as described in a presentation by Dr. Barry Sinervo as a result of potential solar energy development in the vicinity of the translocation area.</i></p>	<p>In addition to the response above that progress on the current applications (if they proceed at all) will require consideration of impacts on the desert tortoise, the single study cited in Dr. Sinervo's presentation relative to a heat-sink effect is based on a simulation whereby 18,750 km² of land area is covered by solar panels, with a peak capacity of 1 terawatt, which is dramatically larger than the combined potential projects in the Stump Springs vicinity. Concerns about a heat-island effect for projects on a realistic development scale are yet unsubstantiated.</p>
<p><i>One comment asked by how many acres does the priority translocation area overlap existing energy applications.</i></p>	<p>Even though these applications have not been approved, the translocation plan has been revised to indicate that the priority translocation area overlaps Boulevard Associates' application by 3,272 acres and Brightsource Energy's application by 16,818 acres.</p>
<p><i>Several comments related to the dispersal distance of translocated tortoises and the potential need to translocate tortoises a second time if they moved onto a potential solar development or the potential for tortoises to disperse across the California state line.</i></p>	<p>The translocation release area is defined based on the distance within which the vast majority of released tortoises are expected to disperse. The upper 95% confidence limit of first-year dispersal distances from tortoises translocated at Ft. Irwin, Bird Spring Valley, and the River Mountains ranged up to 6.5 km, and we use this distance to define the overall translocation recipient site relative to the area in which tortoises are actually released. Based on these data, we expect a very small proportion of translocated tortoises to move beyond 6.5 km, so any ancillary effects relative to these tortoises will be negligible.</p>
<p><i>One commenter asked whether 2013 pre-construction surveys for one of Abengoa Solar's projects would remain valid for purposes of section 7 consultation between BLM and FWS.</i></p>	<p>Based on the rationale explained in the response to the previous comment (e.g., upper 95% confidence limit of dispersal distance), very few translocated tortoises are expected to disperse onto Abengoa's project site. The number of translocated tortoises that may disperse onto Abengoa's project site are expected to fall within the margin of error of their survey estimate, thereby not affecting the survey results.</p>
<p><i>One commenter pointed out errors in the stated AML levels for Red Rock HMA.</i></p>	<p>The AML levels for the Red Rock HMA have been corrected in the plan based on the comment. Based on past BLM herd monitoring along with utilization studies, the portion of the HMA that overlaps the proposed translocation zone is infrequently used by either horses or burros. Instead, horses and burros more frequently use areas north of SR 160 and areas on the eastern slopes of the Spring Mountains south of SR 160. Therefore, competition for forage within the proposed translocation zone is expected to be negligible.</p>
<p><i>Several commenters requested more information on the Barstow to Vegas Dual-Sport event that crosses through the proposed translocation area.</i></p>	<p>The translocation plan has been updated to better describe the dual-sport event. The Barstow to Vegas Dual-Sport event has been run since the mid-1980s. It is a touring event involving street-legal motorcycles that is held at the end of November each year. The event is not a speed-based event. Through the proposed translocation area, the event follows Sandy Valley Road, a well maintained gravel road. Based on discussions with BLM recreation planners that have monitored the event in the past, there has been no evidence of road widening or off-road travel by event vehicles through this area.</p>

<p><i>Several commenters stated that the translocation area should have more protection/land use restrictions to help protect the translocated tortoises from future impacts.</i></p>	<p>The Programmatic EA specifically stated that the translocation of tortoises would not result in additional restrictions or deviations from current multiple use management for the area. In addition, designating the area as an ACEC or excluding certain uses in the area would require a Resource Management Plan (RMP) amendment. The Las Vegas and Pahrump Field Offices are currently going through an RMP revision process.</p>
<p><i>One commenter brought up concerns that as a mitigation strategy, the translocation area needs to be protected in perpetuity.</i></p>	<p>The tortoise translocations covered by the Programmatic EA are recovery actions (population augmentation) based on the Desert Tortoise Recovery Plan and are not minimization or mitigation actions for a specific project.</p>
<p><i>Some comments pointed out that the programmatic EA stated that translocation monitoring results will inform the analysis of new recipient sites.</i></p>	<p>Statements in the Programmatic EA about previous translocations informing future translocations did not imply that no future translocations would occur prior to complete or final assessment of any particular previous translocation. Evaluation of translocation projects is an ongoing process and will continue to inform future translocations in an iterative, adaptive-management process.</p>
<p><i>Two commenters suggested that the lack of individual genetic information for all translocated tortoises would lead to “genetic pollution” of the resident population.</i></p>	<p>As indicated in the draft translocation plan, the programmatic EA, and the peer-reviewed references cited therein, the best available data indicate that a) most of the tortoises at the DTCC originate from localities in the vicinity of the Las Vegas Valley and are likely part of the equivalent genetic unit as Stump Springs (e.g., 95% of samples that were actually tested against a genetic database that included samples from Nevada were assigned to populations within about 100 km of the DTCC), and b) “genetic pollution” or outbreeding depression from any distant tortoises released to the resident populations would only occur over a period of centuries, if at all.</p>
<p><i>Several comments suggested that the proposed disease testing for the Stump Springs project is inadequate or inferior to USFWS requirements for other projects, especially relative to a lack of reliance on an ELISA test for Mycoplasma antibodies as a screening measure; that the translocation plan fails to apply USFWS protocols; that the plan does not consider various disease scenarios; or that the plan proposes to release tortoises known to have various diseases.</i></p>	<p>By requiring multiple health assessments within a 90-day (minimum) quarantine, the disease-screening criteria to be used for Stump Springs exceed USFWS requirements and protocols for other projects. Further, these criteria were specifically designed by veterinary disease experts to screen tortoises with disease or other health conditions of concern (recognizing that ELISA tests provide information only on past pathogen exposure but no indication of current disease status), prevent their release, and minimize risks to both translocated and resident tortoises. Therefore, statements that “tortoises known to have various diseases” will be released are factually incorrect. The translocation plan was revised to clarify that, based on existing data, <i>Mycoplasma agassizii</i> is not unfamiliar to populations throughout southern Nevada so it is unlikely that this is a novel pathogen to the Stump Springs population in the event that an infected tortoise is inadvertently released.</p>
<p><i>One comment questioned the seroprevalence level of antibodies to Mycoplasma agassizii in the Stump Springs area and the rationale for releasing healthy tortoises into an area “where upper respiratory tract disease is a documented threat” with “up to a 13% seroprevalence of disease.”</i></p>	<p>Precise seroprevalence information is not available for the specific project area, although baseline data for future comparative purposes will be collected prior to the translocation. Nevertheless, seroprevalence based on ELISA tests does not provide information on current disease status, so the degree to which URTD is a “documented threat” within the resident population is unknown. Individual wild animals face a variety of stressors, disease is not a unique stressor to any wildlife population, and mycoplasmosis does not appear to be a unique disease stressor to tortoise populations in this area. While individual translocated tortoises will be subject to the same stressors as resident tortoises, the project’s screening protocols ensure that tortoises in the best condition possible will be released to maximize the chances of their successful integration into the population.</p>

<p><i>Several comments criticized translocating tortoises during drought conditions because it causes unnecessary mortality, translocated tortoises will be even more vulnerable to the effects of drought, Pahrump Valley was not identified in a presentation by Dr. Barry Sinervo as a refugium for climate change, and alternatives to avoid, minimize, mitigate effects of drought were not identified.</i></p>	<p>Preliminary results of additional tortoise distribution modeling by U.S. Geological Survey scientists predict less severe range contractions than that by Dr. Sinervo, highlighting the uncertainty surrounding effects of climate change on the desert tortoise. As indicated in the translocation plan and references cited therein, survival of translocated tortoises is equivalent to that of resident tortoises during drought conditions. The focus of the project is to improve the status of the <u>population</u>, not necessarily ensure the survival of every individual animal. Given that we cannot predict when drought conditions will improve, delaying the project delays the opportunity to provide a net increase to the current population.</p>
<p><i>One comment criticized the potential release of juvenile tortoises during drought because the coyote population may be elevated and smaller tortoises are more subject to predation. The commenter asked whether the Fish and Wildlife Service had conducted surveys of rabbit populations or is planning on conducting predator control.</i></p>	<p>As noted above, survival of translocated tortoises is equivalent to that of resident tortoises during drought conditions. The focus of the project is to improve the status of the <u>population</u>, not necessarily ensure the survival of every individual animal. No rabbit surveys have been conducted, and predator control is not planned. As indicated in the revised recovery plan, lethal predator control is a short-term, temporary measure for specific problem areas, and general, widespread predator control is not considered an appropriate recovery action.</p>
<p><i>On comment asked whether it is an adequate measure of success to say that elevated mortality in both the resident and translocated populations is acceptable if the Stump Springs population is already stressed and exhibits higher than average mortality.</i></p>	<p>As noted in the translocation plan and by taking a population view, even though overall survival may be lower than in wetter years, population augmentation will improve population status by providing a net increase in tortoise numbers. Delaying augmentation until a wetter year may increase survival of individual translocated tortoises, while doing nothing to improve survival of resident tortoises. Inaction could extend indefinitely given the uncertainty of future drought. Proceeding in Fall 2014 increases the probability that additional tortoises will more immediately contribute to population recovery.</p>
<p><i>In reference to implications of translocating tortoises during drought conditions, one comment referred to the Fish and Wildlife Service's Biological Opinion on Issuance of Recovery Permits under Section 10(a)(1)(A): "Therefore, long-term drought is likely to have even greater effects, particularly given that the current fragmented nature of desert tortoise habitat (e.g., urban and agricultural development, highways, freeways, military training areas, etc.) will make recolonization of extirpated areas difficult, if not impossible" (emphasis added by commenter).</i></p>	<p>The commenter apparently confused the potential of natural recolonization of fragmented populations with translocation success. The referenced biological opinion noted that habitat fragmentation will make natural recolonization of extirpated populations difficult. This has nothing to do with translocation. Contrary to the commenter's assertion, increasing tortoise numbers in the Stump Springs population has the potential to <u>increase</u> recolonization of nearby populations should they decline or become extirpated as a result of drought or other factors.</p>

<p><i>Multiple comments criticized the lack of analysis of carrying capacity or questioned the habitat potential of the translocation area (e.g., has the Fish and Wildlife Service performed field surveys or a finer-scaled habitat analysis). One commenter asked whether the Fish and Wildlife Service will control exotic plants within the translocation area.</i></p>	<p>The proposed Stump Springs translocation area was identified as a result of Fish and Wildlife Service field trips and determination based on professional opinion that the site contained suitable tortoise habitat. However, detailed vegetation sampling or finer-scaled analysis has not been conducted. As noted in the translocation plan and the revised recovery plan, little to no information on specific habitat characteristics or measures of habitat quality exist relative to carrying capacity for Mojave desert tortoises. More specific data from the translocation area would be uninformative to the question of how many tortoises could be added to the area without exceeding carrying capacity. The Fish and Wildlife Service does not plan on controlling exotic plants within the translocation area; however, in light of the lack of information on carrying capacity mentioned above, habitat-treatment projects are being pursued in which the translocation would contribute to the evaluation of effectiveness of habitat restoration and/or habitat condition would inform the success of the translocation.</p>
<p><i>One comment stated that recovery of wild populations and protection of critical habitat should be prioritized ahead of a newly created “need” to translocate DTCC tortoises in response to political funding whims.</i></p>	<p>Protection of critical habitat and augmenting other depleted populations are not mutually exclusive conservation actions. Any available funds that would have otherwise gone toward operating the DTCC may now be directed toward on-the-ground recovery actions to benefit wild populations instead of primarily benefitting captive populations.</p>
<p><i>Several comments criticized the failure to address causes of declines prior to translocation.</i></p>	<p>The commenters attempt to establish a virtually impossible threshold for the use of population augmentation as a conservation measure for the Mojave desert tortoise. As described in the revised recovery plan, the relative impact of any particular threat, or suite of threats, to the desert tortoise is difficult to determine after the fact.</p>
<p><i>One comment noted that live:dead tortoise ratios provide limited information about population status.</i></p>	<p>We generally agree with the comment and provide this information as part of the broader context of available information from the project area. However, despite the shortcomings of this information, the translocation plan notes that the proportion of dead tortoises found within the Pahrump Valley exceeded the average for all other monitoring strata in Nevada. This suggestion of a greater degree of decline within this population than others in the state reinforces older population survey data also indicating population declines in the area. In any case, site-specific surveys will be conducted this fall to more precisely characterize the status of the Stump Springs population and to determine specific limits on the number of tortoises that may be released here.</p>
<p><i>One commenter requested that differences between the release zone, priority release zone, translocation area, and priority translocation area be clarified.</i></p>	<p>The translocation plan has been revised to clarify these areas.</p>
<p><i>One commenter asked at what elevation will juvenile tortoises be released.</i></p>	<p>The translocation plan has been revised to indicate that a maximum of 20 juvenile tortoises (instead of 40) released at Stump Springs may be part of a habitat-use experiment conducted by San Diego Zoo Global and the U.S. Geological Survey. These individuals may be released at elevations up to 4900 feet. All other juveniles will be released within the defined release zone or priority release zone described in the plan.</p>

<p><i>Various comments criticized the translocation plan's lack of a specific monitoring plan with dedicated funding, questioned whether a different standard was being applied relative to monitoring of this translocation compared to translocations implemented by private developers, and suggested that these points are a result of the Fish and Wildlife Service's rush to close the DTCC.</i></p>	<p>The annual Congressional budget appropriation process precludes the ability to assure funding for a monitoring plan for Stump Springs. This project differs from private development projects in that those projects have dedicated, long-term funding for project implementation that is not available through the federal budget process. However, in light of the lack of information on carrying capacity mentioned above, the translocation plan has been revised to indicate that habitat-treatment projects are being pursued with respect to this translocation. Eliminating expenses related to maintaining former pet tortoises through the closure of the DTCC will free future funding opportunities to apply to monitoring the Stump Springs (or other) translocation projects, as well as to implement on-the-ground recovery actions.</p>
<p><i>Several commenters stated that USFWS has failed to acknowledge that a functional DTCC is a specified mitigation requirement of at least two federally authorized HCPs.</i></p>	<p>As part of mitigation requirements under the Clark County and Lincoln County HCPs, the permittees are responsible for relocating desert tortoises discovered in harm's way, but are not required to send displaced tortoises to any particular facility. The Clark and Lincoln County HCPs identify the DTCC as the facility to transport displaced tortoises that are not immediately able to be relocated because that was the available facility for temporary housing of displaced tortoises when their incidental take permits were issued. Since many HCPs have long permit terms, changes are expected to occur over the course of many years. To address the potential for changes to occur, HCPs include a level of flexibility in implementing their conservation strategies in the form of adaptive management and provisions for incorporating clarifications. As part of the adaptive management process for these HCPs, the Service has the ability to work with the permittees to adapt their plans to respond to new information, provided that any changes to the plans do not result in the additional commitment of land, water, or financial compensation that are not agreed upon by the permittees. Specific to the Clark County MSHCP, the Service serves an active role in coordinating the biennial budget with the County, and will work with the County to adapt the implementation plan to accommodate an alternative process for translocating any displaced tortoises. Specific to the Lincoln County HCP, the Service anticipated that circumstances associated with desert tortoise clearance and translocation may change over time, and included language in the HCP stating that the Service, in coordination with the Desert Tortoise Recovery Office, will determine where tortoises will be taken and will provide technical assistance and instructions to the permittees for the disposition of displaced desert tortoises upon removal from development lands. The Service will work with all HCP permittees in southern Nevada to adapt their plans and develop an alternative to transporting displaced tortoises to the DTCC that is consistent with the conservation and financial commitments provided in their plans.</p>
<p><i>Two comments asked about how many additional translocation plans, affecting how many tortoises, are expected to be developed.</i></p>	<p>Currently, a translocation plan for the Boulder City Conservation Easement, previously approved under EA NV-050-2005-173, is being developed in coordination with Clark County to accommodate tortoises from the DTCC and/or tortoises cleared from development sites in the county (approximately 100 adult tortoises). In addition, three solar projects in the Dry Lake Solar Energy Zone northeast of Las Vegas are proceeding with development plans and expect to translocate tortoises in the spring of 2015; one or more translocation plans will be developed for these projects based on the results of surveys of the project sites this fall. None of these projects would be covered under the BLM's Programmatic Translocation EA. We are unaware of any other specific translocation plans at this time.</p>

E. Persons/Agencies/BLM Staff Consulted

Table 3. List of Staff Consulted

Name	Role	Discipline
Mathew Hamilton	Wildlife, T&E, ACECs, VRM	Wildlife Biologist
Randy Kyes	Recreation, Wild and Scenic Rivers, Wilderness, WSA, BLM Natural Areas, LWC	Wilderness Lead
Krystal Johnson	Farmlands, Wild Horse & Burro	Wild Horse and Burro Lead
Boris Poff	Floodplains, Hydrologic Conditions, Soils, Water Resources, Wetlands	Hydrologist
Ben Klink	Fuels, Weeds	Weeds Specialist
Kerri-Anne Thorpe	Lands	Realty Specialist
Fred Edwards	Grazing, Rangeland Health, T&E Plants, Forestry, Vegetation,	Botanist
Lisa Christiansen	Air Quality, GHG, Wastes	Air and Hazardous Waste Lead
Stanley Plum	Cultural Resources, Native American Religious Concerns,	Archeologist
Gayle-Marrs Smith	Environmental Justice, Socioeconomics	Field Manager, Las Vegas FO
Lorri Dee Dukes	Geology/Minerals	Geologist

Note

Refer to the EA/EIS for a complete list of the team members participating in the preparation of the original environmental analysis or planning documents.

Conclusion

Based on the review documented above, I conclude that this proposal conforms to the applicable land use plan and that the NEPA documentation fully covers the proposed action and constitutes BLM's compliance with the requirement of NEPA.



Signature of Project Lead



Signature of the Responsible Official

Shonna Dooman

8/15/14

Date

Note:

The signed Conclusion on this Worksheet is part of an interim step in the BLM's internal decision process and does not constitute an appealable decision process and does not constitute an appealable decision. However, the lease, permit, or other authorization based on this DNA is subject to protest or appeal under 43 CFR Part 4 and the program-specific regulations.

Translocation Plan
STUMP SPRING
Clark County, Nevada

August 14, 2014

Prepared by the U.S. Fish and Wildlife Service and the Bureau of Land Management

Purpose of translocation: Population Augmentation

Critical Habitat Unit: none

Recovery Unit: Eastern Mojave

Recipient site land ownership: Bureau of Land Management

Action permitted by federal and state wildlife agencies? (list permits, BOs): Yes

federal: TE-08592A-1 (Douglas G. Myers, Zoological Society of San Diego)

FWSDTRO-1 (Roy Averill-Murray, USFWS – Desert Tortoise Recovery Office)

state: S35185 (Allyson Walsh, Desert Tortoise Conservation Center)

S36694 (Edward Koch, USFWS)

EA: DOI-BLM-NV-S010-2012-0097-EA

BO: 2013-F-0273, 2013-F-0273.AMD1

Date of proposed translocation: Fall 2014

Source of translocatees: Desert Tortoise Conservation Center, Clark County, Nevada

Number of translocatees: To be determined (see Specific Goal of Translocation)

Translocation Plan Narrative

Site description

The Stump Spring translocation area (Table 1) lies within an undesignated multiple-use area managed by the BLM in the western portion of Clark County. The Stump Spring area covers approximately 85,000 acres (344 km²) northwest of the town of Sandy Valley (Figure 1). It is bordered by State Highway 160 (SH 160) to the northeast, Tecopa Road to the northwest, and California to the southwest, with the approximate 4900-foot (1,500-meter) elevation line in the Spring Mountains generally forming the eastern boundary. The Greater Trout Canyon translocation area lies on the opposite (north) side of SH 160. The Stump Spring translocation area occurs outside of designated critical habitat, but it does lie within a block of contiguous desert tortoise habitat that may be valuable for population connectivity (i.e., between the Ivanpah Critical Habitat Unit, Death Valley National Park, and areas to the north; USFWS 2012a). Several culverts provide potential connection between the Stump Spring and Greater Trout Canyon areas.

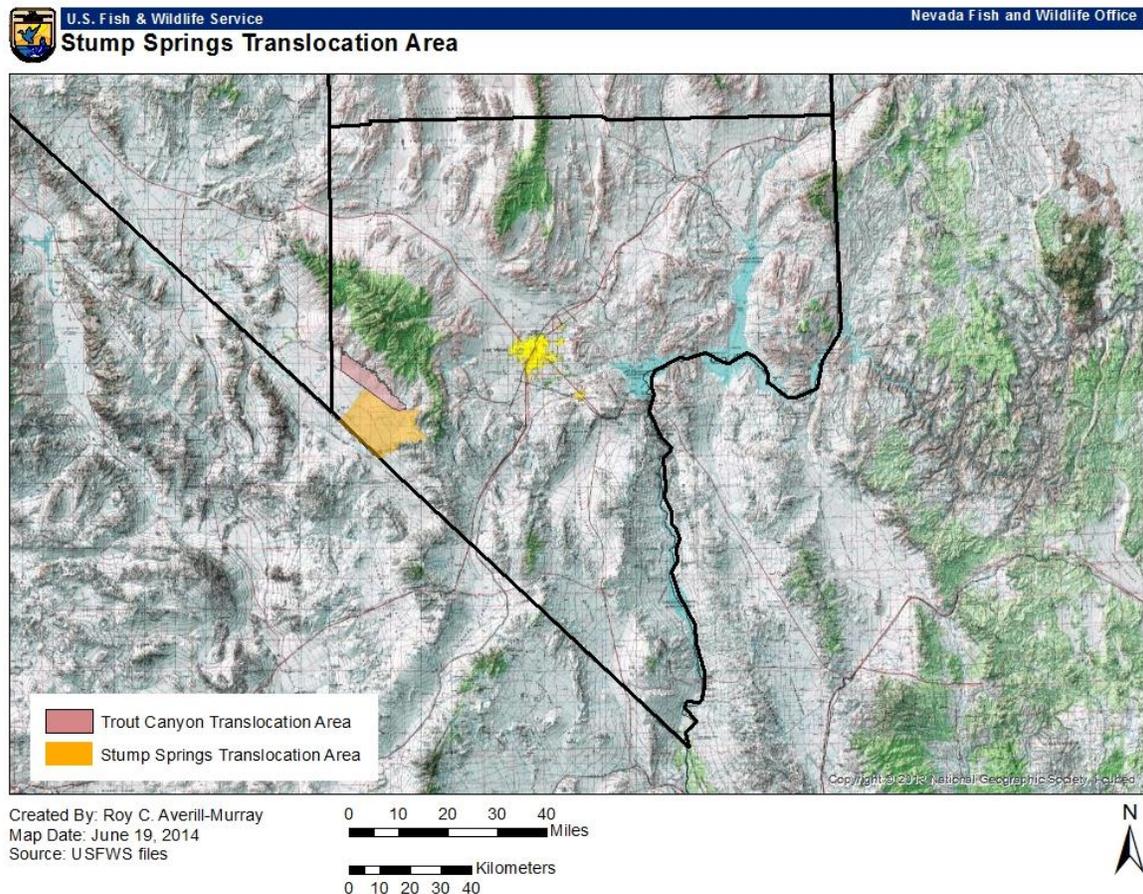


Figure 1. Stump Spring Translocation Area in relation to the Greater Trout Canyon Translocation Area and southern Nevada.

Table 1. Terms related to the Stump Spring translocation project (see also Figure 4).

<p>(Full) Translocation Area</p>	<ul style="list-style-type: none"> • The full translocation area extends from Tecopa Road to the 4900-foot elevation line, bounded by State Highway 160 on the north and the California state line on the southwest. Tortoises released in the Release Area are expected to disperse across the Translocation Area, with few reaching the unfenced boundaries. • Approximately 85,000 acres • Maximum post-translocation abundance (resident + translocated tortoises) = 1,016 adults
<p>Release Zone</p>	<ul style="list-style-type: none"> • Area within which tortoises will be physically released if the full Translocation Area is utilized • Boundaries set 6.5 km from perimeter of the full Translocation Area where not bounded by topography or fencing • Approximately 21,000 acres
<p>Priority Translocation Area</p>	<ul style="list-style-type: none"> • The Priority Translocation Area was delineated to minimize overlap with pending solar applications. Subject to final determination of the number of tortoises available for translocation and the maximum number that can be added to the population, releases will occur so that most tortoise dispersal will be confined within the Priority Translocation Area. • Approximately 61,000 acres • Maximum post-translocation abundance (resident + translocated tortoises) = 700 adults
<p>Priority Release Zone</p>	<ul style="list-style-type: none"> • Area within which tortoises will be physically released if only the Priority Translocation Area is utilized • Boundaries set 6.5 km from perimeter of the Priority Translocation Area where not bounded by topography or fencing • Approximately 6,600 acres

Mojave Desert scrub dominates the site. Small amounts of salt desert scrub, gypsum soils, and mesquite/catclaw habitats occur on the valley floor in the southern portions of the site. Most of the site lies on the floor of Pahrump Valley at elevations of 2,600-3,000 feet (800-900 meters). Small, isolated hills and ridges occur in the southern portion of the site. The major drainage direction is northeast to southwest; major washes include Lovell Wash and Potosi Wash.

Several well-used unpaved roads cross the site, one of which connects SH 160 with the town of Sandy Valley. Two existing utility corridors bisect the area. The 3,500 foot-wide West Wide Energy Corridor, established in 2009 as a component of the Energy Policy Act of 2005, runs approximately 18 miles through the area in a northwest-southeast direction. A second corridor,

designated in the BLM's Resource Management Plan (RMP), is 2,640 feet wide. It runs parallel but not contiguous to the 2009 corridor for most of its length; within the overall translocation area, the corridors are closest at Tecopa Road (0.18 miles apart). The only development within these corridors is a single line through the eastern portion of the RMP corridor.

Several solar-development applications overlap the translocation area (Figure 2). Each of these applications are considered "pending" under the programmatic solar environmental impact statement (U.S. Bureau of Land Management and U.S. Department of Energy 2012). All of the applications have been pending since 2011 or earlier, and none of them are being actively processed or analyzed under NEPA by the BLM. The two applications by Abengoa Solar primarily lie on the western side of Tecopa Road, and development is not planned on the eastern side of the road. The Boulevard Associates application comprises 3,272 acres proposed for photovoltaic development, and the Brightsource Energy application comprises 6,787 acres proposed for concentrating solar ("power tower") development. Any future development of these applications must take into consideration desert tortoises and will accommodate translocated tortoises that have dispersed throughout the translocation area. However, in order to minimize future conflicts with potential solar development, a 61,174-acre (247.6-km²) priority translocation area has been identified (Table 1; Figure 3). The priority translocation area overlaps Boulevard Associates' application by 3,272 acres (13.2 km²) and Brightsource Energy's application by 16,818 acres (68.1 km²). The population augmentation will focus on this priority area, subject to the limit of tortoises that can be added to the priority area (see Specific Goal of Translocation and Figure 4, below) and the number of tortoises available for release.

Four grazing allotments in the area are currently closed. There are numerous mining claims that potentially impact the site. Most of these are concentrated in the Spring Mountain foothills on an approximate 6,000-acre block in the southeast corner of the area. Validity exams have not been conducted on any of the claims, most of which are held by three entities. The BLM has designated one community mineral materials site for commercial sales with approximately 6,400 acres located near Sandy Valley. The last recorded use of this site was in 1994. Off-highway-vehicle use within the area is restricted to existing roads and trails. One motorized event occurs within the unit, the Barstow-to-Las Vegas dual-sport event. This event has been held annually in late November for the last 30 years and is expected to continue. The event is a non-speed-based event and involves street-legal motorcycles traveling on existing roads and trails. Through the translocation area, the event uses Sandy Valley Road.

Nevada Department of Wildlife (NDOW) Hunt Management Unit 262 includes and surrounds the translocation area. Portions of two Wild Horse and Burro Herd Management Areas (HMA) are located within the area. The Red Rock HMA includes 25,000 acres within the area and has an Appropriate Management Level (AML) of 29-49 burros and 16-27 horses. The Wheeler Pass HMA includes about 22,000 acres in the area and has an AML of 47-66 horses and 20-35 burros. Based on past BLM herd monitoring and utilization studies, the portions of the HMAs that overlap the proposed translocation area are infrequently used by either horses or burros. Instead, horses and burros more frequently use areas north of SH 160 and areas on the eastern

slopes of the Spring Mountains south of SH 160. Therefore, competition for forage within the translocation area is expected to be negligible.

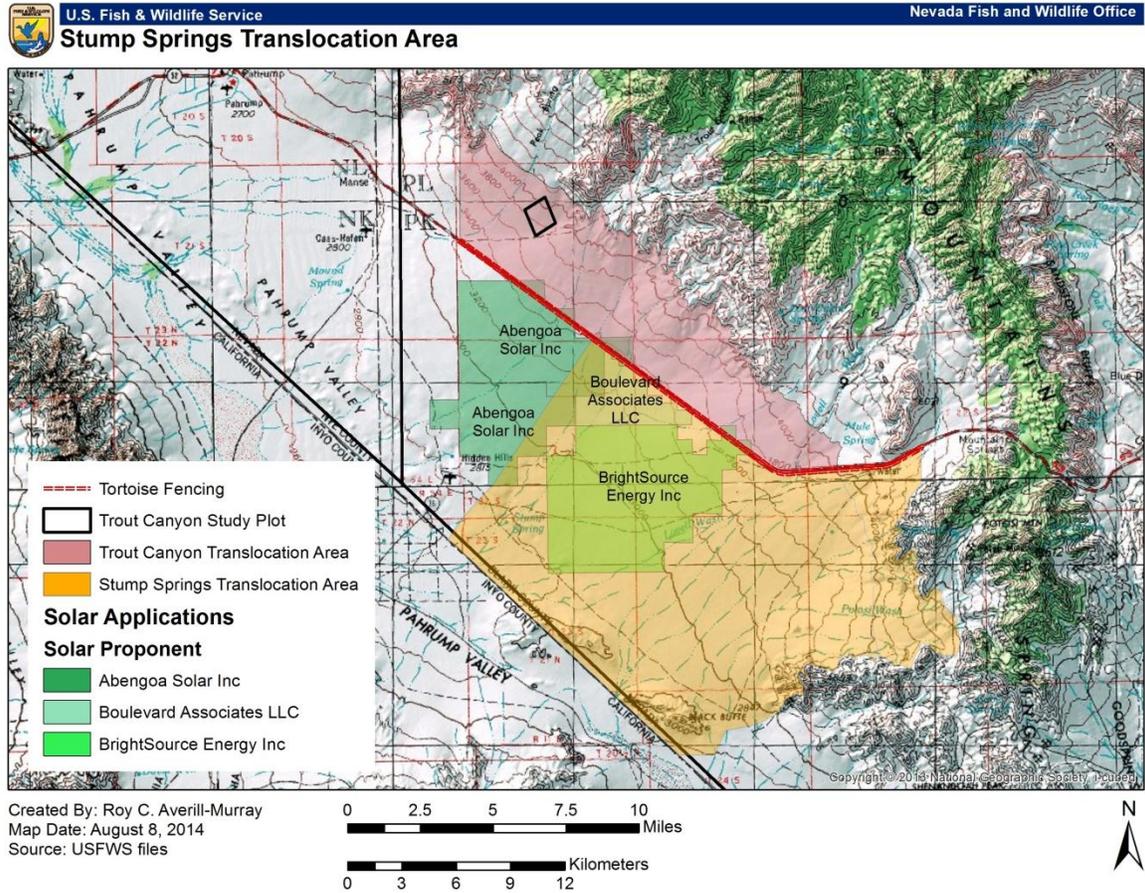


Figure 2. Stump Spring Translocation Area relative to pending solar-development applications and the Trout Canyon study plot.



Stump Springs Translocation Area

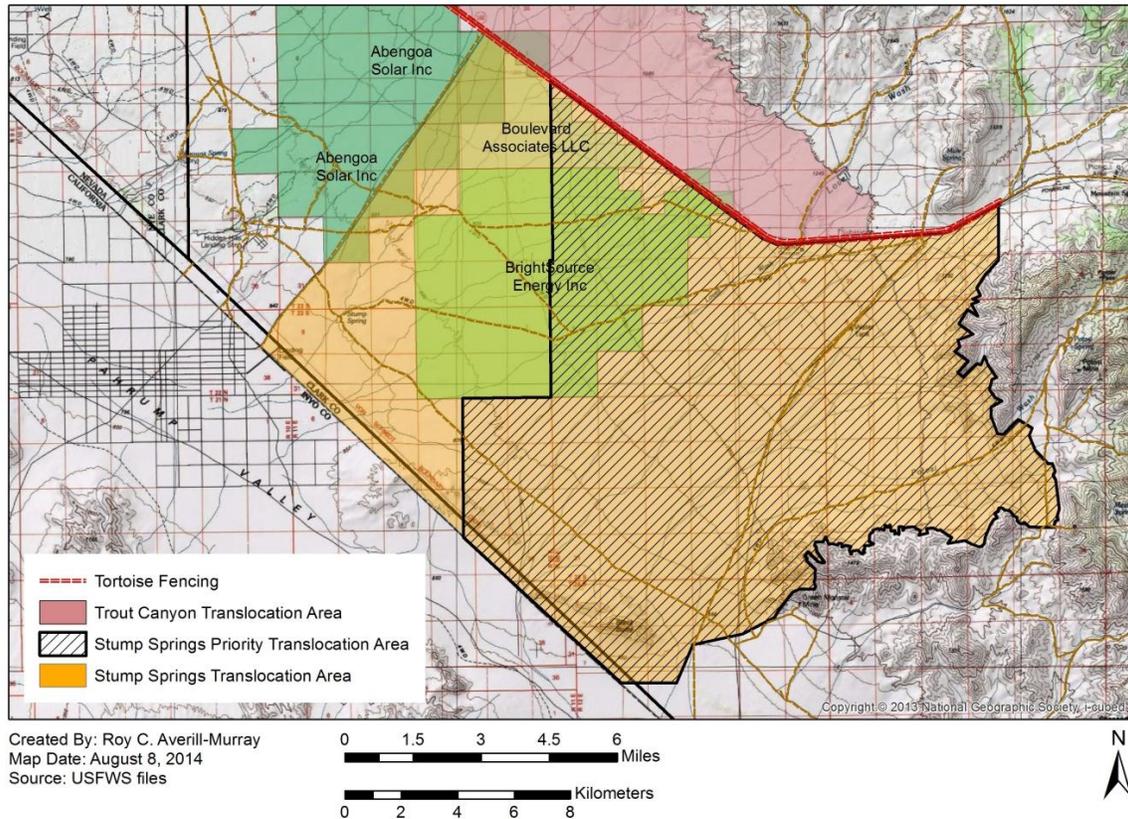


Figure 3. Stump Spring priority translocation area.

The area surrounding Stump Spring is currently classified as experiencing “severe drought” conditions (Palmer Drought Severity Index = -3.0 – -3.9; Tinker 2014). Since the beginning of 2012, moderate to severe drought conditions have been present in the area during May-July 2012, May-July 2013, and February-April 2014 (National Climatic Data Center 2014). Precipitation outlooks for the area suggest that three-month rainfall totals may exceed the 1981-2010 average by up to 0.2 inches between August and November 2014 (NOAA/National Weather Service 2014).

Translocation will have no effect on current multiple use of the site. For example, future grazing of the site will be managed in accordance with BLM’s resource management plan relative to allotments that occur outside designated critical habitat and Areas of Critical Environmental Concern. Potential conflicts with increased numbers of desert tortoises and human activities will be accommodated through routine planning, monitoring, and consultation between the BLM and Fish and Wildlife Service.

Selection of release sites

Tortoises will be released within an approximately 6,569-acre (26.6-km²) priority release zone within the priority translocation area (Table 1; Figure 4). If the full translocation area is used,

releases will occur within a larger 21,150-acre (85.6-km²) release zone (Table 1; Figure 4). Specific release points will be selected close to the time of release and will take into account conditions at that time. The goal is to distribute tortoises throughout the site while minimizing risks to individuals by staying at least 6.5 km from unfenced portions of paved roads that are not otherwise bounded by topographic features or other hindrances to tortoise dispersal (most desert tortoises are expected to settle within 6.5 km of their release point; USFWS 2012b). Existing roads will be used to access different portions of the release area, and tortoises will be distributed broadly rather than released within one localized area.

A group of up to 20 juvenile tortoises (carapace length <100 mm) may be released at a higher elevation within the translocation area, but outside the release zone defined in Figure 4, as part of a related habitat-use experiment conducted by San Diego Zoo Global and the U.S. Geological Survey. These tortoises, which are not expected to disperse as far as translocated adults, will be compared to a cohort at a lower elevation in the Greater Trout Canyon translocation area.

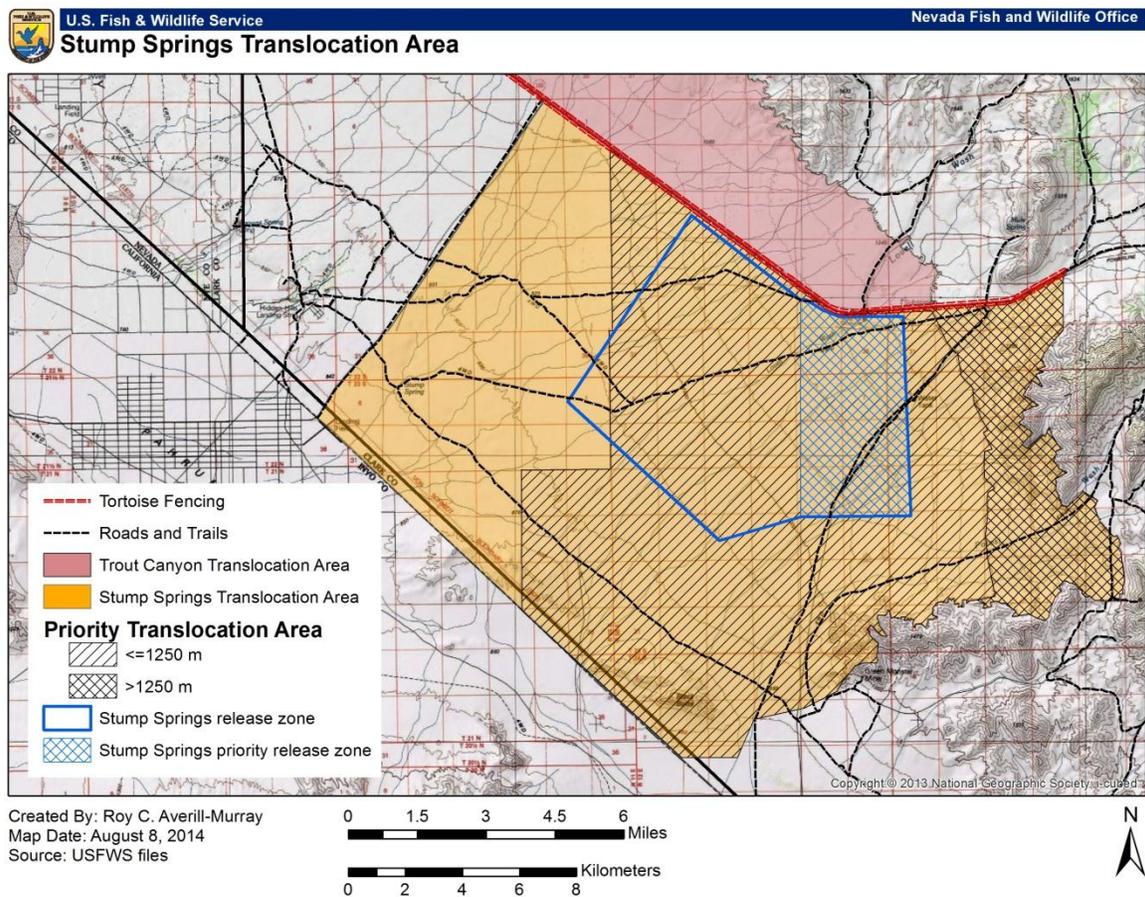


Figure 4. Release zones within the Stump Spring Translocation Area.

Density/Trends of Resident Tortoise Population

The nearest historic population study plot is a 1-mi² (2.6-km²) plot within the western end of the Greater Trout Canyon translocation area, approximately 7.5 km northwest of the nearest point of the Stump Spring translocation area (Figure 2). The plot was surveyed in 1987 and 1992 (Hardenbrook, undated; Holle et al. 1992). In 1987, 31 tortoises were captured at least once (24 >180mm carapace length) on the plot, and estimated adult abundance was 30 ± 25 (2 SE; = 11.6/km²) (Hardenbrook, undated). Surveyors found 28 adult shell remains (ratio of dead:live adults = 1.17), most of which were estimated to have died >2 years previous to the survey. In 1992, 27 tortoises were captured at least once (25 >180mm carapace length), and estimated adult abundance was 19 ± 8.6 (= 7.3/km²) (Holle et al. 1992). Surveyors found 13 shell remains on the plot (dead:live = 0.52), at least 5 (38%) of which were tortoises marked in 1987.

More recent surveys were conducted southeast of Pahrump, Nevada, during the 2008 range-wide monitoring season between 19 and 29 May (USFWS 2012c). Field workers surveyed 75 transects totaling 847 km in the area that includes the Stump Spring site. Estimated density was 2.9 adult tortoises per km² (CV = 43.9). Within the entire Pahrump Valley (i.e., north and south of Pahrump), 28 of 58 tortoise detections were of shell remains; the ratio of dead:live tortoises (0.93) exceeded the average for all other monitoring strata in Nevada (range = 0.16-0.83; USFWS, unpubl. data). Twenty-nine full or partial transects were walked within the boundaries of the Stump Spring translocation site, and only 16 of 34 tortoise detections were of live animals. Between 2004 and 2012, estimated tortoise density across the Eastern Mojave Recovery Unit, within which this site lies, had declined to 2.6 adult tortoises per km² (USFWS, unpubl. data).

Additional surveys are planned for Fall 2014, prior to translocation, to determine a more precise, site-specific estimate of tortoise density within the Stump Spring area. To adjust for the number of tortoises that could not be detected because they were deep underground in burrows, we will make behavioral observations on resident tortoises outfitted with radio transmitters in the Greater Trout Canyon translocation area to estimate the proportion that are not detectable while surveys are conducted on transects (USFWS 2012c). Barring an unexpectedly high population estimate this fall, it is apparent that the tortoise population in the area has suffered a decline of some degree in the moderate past. The 2014 estimate will determine the maximum number of tortoises to be added to the local population (see Specific Goal of Translocation, below).

Specific Goal of Translocation

Population augmentation is an important tool for conservation of the Mojave desert tortoise (USFWS 2011). The primary goal for translocation to the Stump Spring area is to augment the population to increase density to a level comparable to that seen within the surrounding Eastern Mojave Recovery Unit. For a successful translocation, the number of tortoises in any area should not exceed the capacity of the surrounding desert. Little to no information on

specific habitat characteristics or measures of habitat quality exists relative to carrying capacity for Mojave desert tortoises (USFWS 2011). Therefore, we will use densities recently observed elsewhere in the recovery unit to set a conservative population-density target. Densities described by a single standard deviation of the mean tortoise density for a recovery unit are not unusually high. Given appropriate habitat and tortoise management, the rationale described above results in a maximum post-translocation density of adult tortoises not to exceed the 68% confidence interval (i.e., one standard deviation) of the mean density in the respective recovery unit (USFWS 2012b). For the Eastern Mojave Recovery Unit, the density represented by the upper 68% confidence limit is currently 3.3 adult tortoises/km² (USFWS, unpubl. data).

Typically, Mojave desert tortoises occur at elevations <4100 feet (1250 m). However, we defined the translocation area to include the approximate 4900-foot (1500-m) elevational limit, and the release zone is within the expected dispersal distance (6.5 km) of this elevation. To ensure that we do not underestimate post-translocation density in the event that few tortoises disperse above 4100 feet, we subtracted the area above 4100 feet (approximately 8900 acres [36 km²]) in determining the maximum number of tortoises to augment the population. For the priority translocation area, this maximum abundance equates to a total of 700 adult tortoises ([248 km² – 36 km²] * 3.3 adult tortoises/km²). The maximum post-translocation abundance for the full translocation area is 1016 adult tortoises ([344 km² – 36 km²] * 3.3 adult tortoises/km²). The number of adult tortoises released to Stump Spring will not exceed the difference of the maximum limits defined above and the estimate obtained from the Fall 2014 surveys.

Juvenile tortoises (<180 mm carapace length) have naturally higher mortality rates than adults, so fewer tortoises released in this size category are expected to contribute to the population or compete for resources than adult translocated tortoises (Bjurlin and Bissonette 2004; see also Averill-Murray 2002). As a conservative limit, however, the number of juvenile tortoises released will not exceed the number of adults released. We expect that approximately 13% of the total population consists of tortoises ≥180 mm carapace length (Turner et al. 1987), so limiting the maximum number of juveniles (which normally comprise about 87% of a population) released to the total number of adults released will add fewer tortoises to the population than would be normally represented in a full size distribution.

Despite the area currently experiencing drought conditions, the proposed translocation targets an area that is considered to have high tortoise habitat potential (Nussear et al. 2009). Furthermore, recent research has shown that survival of translocated tortoises is similar to non-translocated tortoises even under drought conditions (Esque et al. 2010; Nussear et al. 2012). Therefore, while overall survival may be lower than in wetter years, we expect augmentation to improve population status by providing a net increase in tortoise numbers. Delaying augmentation until a wetter year may increase survival of individual translocated tortoises, but inaction could extend indefinitely given the uncertainty of future drought, allowing for continued declines in the resident population.

Health Considerations

Health in a population context can be thought of as the ability of a population to perform all of its ecological functions with typical efficiency (Hanisch et al. 2012). Inherent in this is the idea that healthy populations should be able to remain resilient and self-sustaining in the face of naturally occurring disease. It is neither possible nor desirable for organisms to be “parasite and disease free”, so there is rarely cause to consider translocation unfeasible due to disease or parasites if reasonable precautions are taken (IUCN 2013). However, all aspects of the translocation process can cause stress-induced disease (but see Drake et al. 2012), so strict disease-prevention, quarantine, and handling/release protocols will be implemented based on the most recent guidance available (e.g., Woodford 2000; USFWS 2012b) and procedures described below.

Health status of resident tortoise population

One pathogen of long-standing concern is *Mycoplasma agassizii*, a bacterium known to cause upper respiratory tract disease. Seroprevalence of *M. agassizii* was recorded at levels up to 13% in the Stump Spring area (and higher levels elsewhere in southern Nevada; Sandmeier et al. 2013). This indicates that *M. agassizii* is not unfamiliar to populations in southern Nevada and that inadvertent release of an infected tortoise from the DTCC to Stump Spring would not introduce a novel pathogen to the population. Documented presence of *M. agassizii* indicates that extensive disease screening for this pathogen is likely unnecessary (IUCN 2013). However, in order to collect data for post-translocation monitoring purposes, we will conduct complete health assessments according to standardized protocols (USFWS 2013), including collection of biological samples, on each tortoise found during the Fall 2014 surveys.

Health status of translocatees

Current guidance developed for wild-to-wild translocation projects provides a structured approach for evaluating health status of individual desert tortoises prior to translocation (USFWS 2013; Figure 5). All tortoises to be translocated in this project will be selected from the collection residing at the Desert Tortoise Conservation Center (DTCC) in Las Vegas. The DTCC is operated by San Diego Zoo Global (SDZG), and comprehensive physical exam and sample collection protocols were developed by San Diego Zoo Global veterinarians in conjunction with other consulting veterinarians, scientists, and biologists. These protocols include health assessments that take into account body condition, clinical signs of disease, exam findings (e.g., coelomic masses or white mucous membranes), weight history, medical history while at the DTCC, presence of ectoparasites, concurrent illness in cohorts, and other factors determined to be important in appropriately assessing an individual’s health and determining suitability for translocation. The protocols have been adapted from published recommendations (Berry and Christopher 2001) and IUCN guidelines (Woodford 2000). Quarantine before release is a basic disease-prevention precaution for translocation, and potential stress caused by confinement usefully may bring out latent infections (IUCN 2013). All tortoises to be released will have undergone a quarantine period of ≥ 90 days with repeated health evaluations (Woodford 2000).

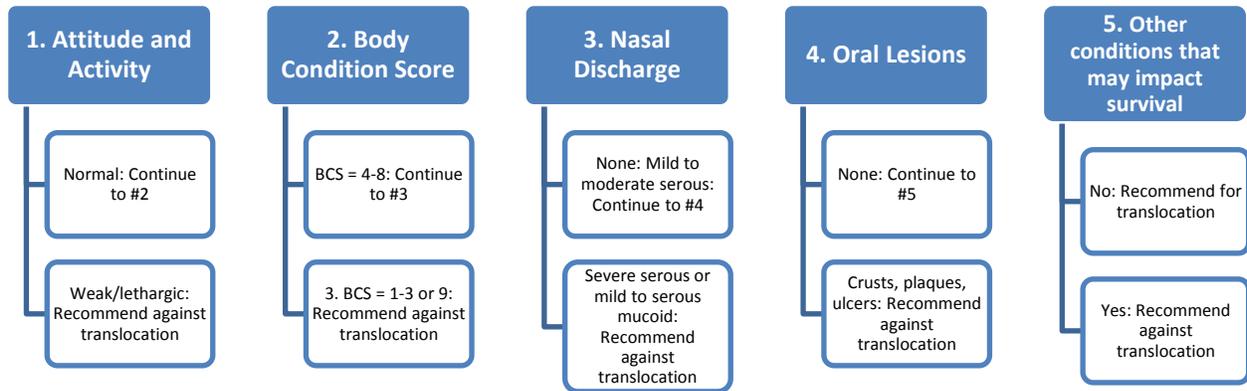


Figure 5. Algorithm for evaluating if desert tortoises are suitable for translocation, taken from USFWS (2013) guidance for wild-to-wild translocation projects. BCS = body condition score.

Given the particular condition of using captive tortoises for population augmentation, additional health-related eligibility criteria will be applied beyond those depicted in Figure 5 (Attachment 1; these criteria may be modified to incorporate new information). For example, individuals housed together in pens will be disqualified collectively and subjected to additional quarantine if a single individual shows signs of disease. Additional individual criteria to minimize risks to individual translocated tortoises, as well as to the resident population in the Stump Spring area, include screening for bladder stones and ectoparasites and ensuring that each translocated tortoise has a history of maintained or increased weight (Attachment 1). Health-history documentation of all release candidates will be evaluated, and all release candidates will be assessed according to current protocols. The history of repeat evaluations increases the chances of observing an abnormal condition and minimizes the chance of releasing a sick individual. Only tortoises that pass the DTCC’s comprehensive health screening will be released.

Genetic Considerations

The Stump Spring translocation area is located approximately 40 km west of the DTCC. Moving tortoises within 175 km of the DTCC ensures that the vast majority of released tortoises will remain in a genetic unit equivalent to that of their origin (actual locality of genetic origin, not that of the area immediately surrounding the DTCC). For example, 95% of samples that were tested against a genetic database that included samples from Nevada were assigned to populations within about 100 km of the DTCC (USFWS 2012d). Additionally, the risk of inducing outbreeding depression in desert tortoises is low and would only manifest itself on a time scale of 600 years or more, if at all (Averill-Murray and Hagerty 2014). As a result, we consider genetic analysis of individuals as a means of selecting tortoises to be translocated to be unnecessary. Negative population effects will be further reduced in the event any translocated individuals do happen to originate from a more distant population (which we expect to be a rare occurrence) if they are poorly adapted to conditions in the Stump Spring area and do not successfully integrate into the resident population (Edwards and Berry 2013).

Monitoring

A specific monitoring approach and design will be developed depending on available funding. However, it is a Fish and Wildlife Service priority to gather additional information about the potential long-term effects of translocation. For example, in light of the lack of information on carrying capacity mentioned in the Specific Goal of Translocation, above, a habitat-treatment/response project is being pursued. Developing such a habitat-focused project or other monitoring approaches is a priority to evaluate the success of this translocation relative to site-specific conditions and to support our adaptive management approach to subsequent translocation projects. Toward that end, tortoises found during the Fall 2014 pre-release surveys and all translocated tortoises will be given permanent marks to provide the option to comparatively monitor residents and translocatees through future mark-recapture surveys. For example, a potential approach would use survivorship and health of translocatees and of residents to describe the success of the translocation relative to habitat treatments in different parts of the translocation area or between other translocation areas (Trout Canyon, for example).

Archived blood samples of all translocated tortoises will be available for comparison with resident tortoises if particular questions about health or genetics arise in the future. Other monitoring topics that may be pursued include long-term changes in prevalence of upper respiratory tract disease, as measured by observation of clinical signs of disease, and correlates of population change with respect to habitat characteristics or threats.

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Attachment 1

Health Eligibility Criteria

2014 Translocation from DTCC to the Stump Spring Translocation Area

Initial Assessment of Pen Group Eligibility

- Assess **all** individuals occupying pen concurrently.
- The pen group is preliminarily deemed eligible if no tortoises in the pen have signs of disease.
- If one or more tortoises in the pen show mild to moderate signs of disease, the pen is not eligible for release, and all tortoises in pen will be treated and observed with re-assessment for eligibility after 3 months.
- If one or more tortoises in the pen has a Body Condition Score ≤ 3 and/or moderate to severe signs of disease, those individuals receive a follow-up health assessment immediately, and the pen is quarantined for 30 days.

Individual Eligibility

- Pre-release comprehensive health assessment, which includes a full physical exam and collection and banking of biological samples (blood, choanal swab, cloacal swab, nasal lavage) conducted
- Normal behavior for season and time of day
- Normal bodily functions
- No active signs of communicable disease
- Serous 1 nasal and/or ocular discharge **does not disqualify** a tortoise from eligibility if there is no scarring or missing scales around the nares and no other health issues
- No oral lesions
- No white oral cavity
- No bladder stones
- No ectoparasites
- No generalized skin conditions
- Body Condition Score 4-7
- History of maintained or increased weight
- 4 legs and normal ambulation
- No gross disfigurements such as severely flattened carapace, unusually domed or peaked carapace, or grossly enlarged carapace
- Midline carapace length ≤ 330 mm

Final approval for release will be given by the DTCC's Conservation Program Specialist or DVM after review of assessments.