United States Department of the Interior

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LAS VEGAS FIELD OFFICE

April 20, 2006
File No. 1-5-06-F-416

Memorandum

To: Sloan Canyon National Conservation Area Manager, Las Vegas Field Office, Bureau of Land Management, Las Vegas, Nevada

From: Field Supervisor, Nevada Fish and Wildlife Office, Reno, Nevada

Subject: Programmatic Biological Opinion for Implementation of Actions Proposed in the Sloan Canyon National Conservation Area Resource Management Plan, Clark County, Nevada

This document transmits the U.S. Fish and Wildlife Service's (Service) programmatic biological opinion based on our review of programmatic activities proposed for implementation by the Bureau of Land Management (BLM), as described in your September 2005, biological assessment (BA) (BLM 2005a), and its effects on the threatened Mojave desert tortoise (*Gopherus agassizii*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*). Critical habitat designated for the desert tortoise is not anticipated to be adversely affected by the proposed action, thus we determined that further analysis of critical habitat is not necessary. Future BLM actions that may adversely affect the desert tortoise may be appended to this biological opinion which will be assigned the same consultation number followed by ".APD," then the project/action number (*e.g.,* 1-5-06-F-416.APD1).

This biological opinion is based on information provided in the BA; September 2005 Proposed Resource Management Plan (RMP) and Final Environmental Impact Statement (EIS) for the Sloan Canyon National Conservation Area (NCA) (BLM 2005b); July 16, 2003, draft Service guidance for programmatic biological opinions (Attachment A); September 22, 2005, memorandum from BLM to the Service; discussions and electronic mail between the Service and BLM staff; and our files. The Service requested additional information from BLM on December 29, 2005, and received a response with the requested information on January 27 and February 23, 2006. A complete administrative record of this consultation is on file in the Southern Nevada Field Office, Las Vegas, Nevada.

TAKE PRIDE IN AMERICA

Programmatic Consultations

This biological opinion was prepared in accordance with the July 16, 2003, draft guidance for programmatic-level consultations (Attachment A). The term "programmatic consultation" has become a generic term encompassing a broad category of section 7 consultations that evaluate the potential for Federal agency programs to affect listed and proposed species, and designated and proposed critical habitat. Such programs typically guide implementation of future agency actions by establishing standards, guidelines, or governing criteria to which future actions must adhere. At times the term *programmatic consultation* has been used to refer to consultations on a large group of similar actions (*e.g.*, a national forest's timber harvest program for a particular year) as well as to refer to consultations covering different types of actions proposed within a large geographic area, such as a watershed. Such consultations can provide the benefit of streamlining the consultation process while leading to a more landscape-based approach to consultations that can minimize the potential "piecemeal" effects that can occur when evaluating individual projects out of the context of the complete agency program.

This programmatic biological opinion analyzes the potential effects of implementing BLM's proposed actions within the Sloan Canyon NCA and develops the appropriate project-specific documentation that addresses the effects of individual projects. This programmatic biological opinion contains all of the elements found in a standard biological opinion. The format of this programmatic biological opinion conforms to the *appended programmatic consultation approach*, which will require that BLM and the Service produce project-specific documentation that is physically appended to this programmatic biological opinion **before** the action occurs. The Service encourages BLM to use the attached form (Attachment B) to facilitate processing future actions to be appended to this biological opinion.

Project-level Consultation under the Appended Programmatic Consultation Approach

As individual projects are proposed under the appended programmatic consultation approach, BLM will provide project-specific information that: (1) describes each proposed action and the specific areas to be affected; (2) identifies the species and critical habitat that may be affected; (3) describes the manner in which the proposed action may affect listed species; (4) describes the anticipated effects; (5) specifies, if appropriate, that the *anticipated effects from the proposed project are consistent with those anticipated in the programmatic biological opinion*; (6) describes proposed measures to minimize potential effects of the action; and (7) describes any additional effects, if any, not considered in the programmatic consultation.

The Service reviews the information and effects analysis provided for each proposed project and this project-specific review is documented in accordance with the guidance provided below. To initiate the project-specific review, BLM's project information and effects analysis should be accompanied by a cover letter that specifies that the action agency has determined that the proposed project is consistent with the programmatic biological opinion, and requests that the

proposed project be appended to the programmatic biological opinion to fulfill BLM's consultation requirements. In this programmatic biological opinion, the Service determined the overall anticipated incidental take for all proposed BLM activities in the action area over a 10-year period, at the programmatic level. As each action is submitted by BLM to the Service to be appended to this programmatic biological opinion, the Service will determine the anticipated incidental take for each action, at the project level, as a subset of the incidental take anticipated in the programmatic biological opinion. BLM shall be responsible for accurately reporting any incidental take of listed species to the Service that occurs in association with actions covered under this programmatic biological opinion. This process is a modification of the appended approach which involves only programmatic-level incidental take statements.

Individual BLM actions that are *likely to adversely affect* listed species shall require a memorandum from the Service to BLM that contains:

(1) a summary of any information not identified in the programmatic consultation document used to evaluate the effects of the proposed action;
(2) a short project summary as provided by BLM;
(3) a detailed discussion of the effects of the proposed action on listed species and critical habitat;
(4) a statement regarding the specific project's effects to the environmental baseline, including a restatement of the amount of take that is anticipated and a tallying of the overall effects to the environmental baseline from projects implemented under the programmatic consultation to date;
(5) any additional project-specific reasonable and prudent measures and/or terms and conditions needed to ensure the minimization of the effects of the take that will result from the proposed project; and,
(6) language that appends the project to the programmatic consultation and associated incidental take statement, if appropriate.

Although there is no standard for the required project-specific documentation, the Service generally should complete its response in approximately two pages and within 45 days. This documentation is then physically attached (appended) to the programmatic biological opinion in an appendix. Therefore, the programmatic biological opinion, together with the appended documentation, fulfills the consultation requirements for implementation of both program-level and project-level actions.

Monitoring shall be conducted at least annually by BLM and the Service to assure that the effects analysis in the programmatic biological opinion is accurate including a comprehensive review of how the program-level biological opinion is working, and whether its implementing procedures are in compliance. During this review, the environmental baseline should be reviewed and updated as needed to account for unanticipated effects or the lack of anticipated effects. During

this process it may be determined that the program-level biological opinion is functioning as anticipated and, therefore, activities should continue, or that adjustments should be made.

Consultation History

On November 25, 2003, BLM requested a species list from the Service for the Sloan Canyon NCA. We provided a species list as requested on December 22, 2003, which included the Mojave desert tortoise as the only federally-listed species anticipated to occur within the Sloan Canyon NCA.

BLM requested formal consultation for the subject action by memorandum dated September 20, 2005. The Service received BLM's request on September 22, 2005, at which time formal consultation was initiated.

A. BIOLOGICAL OPINION

I. Description of the Proposed Action

The proposed action for this consultation is BLM's approval of the Sloan Canyon NCA RMP and implementation of resource and land-use management programs within the Sloan Canyon NCA over the next 10 years, which are described in the BA and Proposed RMP/EIS for the Sloan Canyon NCA. The proposed Sloan Canyon RMP provides for moderate levels of developed recreation, facilities, and transportation with management actions to ensure that resources or visitor experiences are not unacceptably degraded. There are currently no BLM-approved facilities in the action area. Several dirt roads would provide access into the NCA. A comprehensive interpretive plan is included in the Proposed RMP/EIS. The Proposed RMP/EIS includes the North McCullough Wilderness Management Plan. The Executive Summary and Chapter 2 of the Proposed RMP/EIS describe the range of wilderness management actions as analyzed in Chapter 4 of the document.

Due to the funding uncertainty and adaptive management needs, all future actions in the NCA cannot be predicted at this time. If a "new" activity is proposed that may not have been specifically identified in the proposed action or BA, and the potential effects to the desert tortoise that may result from a similar activity have been adequately addressed in this biological opinion, coverage for such new actions may be included as part of this consultation; however, the effects to the desert tortoise must be within the scope of analysis for this biological opinion. Actions proposed to occur in the action area that would result in effects to the desert tortoise beyond those considered in this biological opinion may require further consultation.

In 2002, Congress legislated the Clark County Conservation of Public Land and Natural Resources Act of 2002, which designated and established the 48,438 Sloan Canyon NCA and the

North McCullough Wilderness. The Sloan Canyon NCA, which includes the 14,763 acre McCullough Wilderness, is the action area for this consultation (Figure 1). These lands are managed by BLM's Las Vegas Field Office, Clark County, Nevada.

The Sloan Canyon NCA encompasses the northern portion of the McCullough Range and occurs southeast of Las Vegas on the border of the City of Henderson in southern Nevada. The northernmost boundary of the Piute-Eldorado Desert Tortoise Critical Habitat Unit occurs approximately 3 miles south of the southern boundary of the Sloan Canyon NCA. Elevations within the Sloan Canyon NCA range from 1,800 feet on the southern end to 5,000 feet at Black Mountain.

The Sloan Canyon NCA is comprised of four Management Emphasis Areas (MEA) which provide a general framework for managing uses within a particular area. These MEAs are: (1) Developed, (2) Roaded Natural, (3) Semi-primitive, Non-motorized, and (4) Primitive (Figure 2).

1. Developed MEAs (396 acres) - generally includes areas that will have substantial modification of the natural environment. These sites will have intensified motorized use, a large amount of parking availability, a moderate to high level of human interaction, and widely available visitor support facilities. The north access to Sloan Canyon NCA where the proposed visitor's center would be located would be zoned as Developed.

2. Roaded Natural MEAs (15,643 acres) - typically has developments limited to improved access and those consistent with the natural environment. The recreational experience in this zone is based on the natural setting, and may include roads, trails and unimproved camping areas. Human interaction at this site is low to moderate, with the majority being low. Onsite controls are subtle and this zone includes areas with existing dirt roads. This zone encompasses the area north of McCullough Road and Trail right-of-way and trailheads.

3. Semi-primitive, non-motorized MEAs (17,816 acres) - contains areas that may not necessarily be remote and may be relatively accessible but human interaction level is low. Opportunities provided in this zone include trails for mountain bikes, horse riding, and hiking. Existing roads are closed and have been converted to trails and all motorized use is prohibited. Off-site controls are preferred, and facilities are avoided but may be provided for resource protection or user safety. This area includes the Petroglyph Management Area.

4. Primitive MEAs (14,595 acres) - contains areas where the user assumes more risk, and self-reliance is necessary. These are remote areas away from primary travel routes and are not easily accessed. Any access to the sites occurs by hiking and horseback as mechanized vehicles are prohibited. Human interaction is rare to low and evidence of other users is minimal. No onsite controls or facilities are provided except those required for resource protection. These areas include the North McCullough Wilderness Area.

Figure 1. Sloan Canyon NCA Planning Area

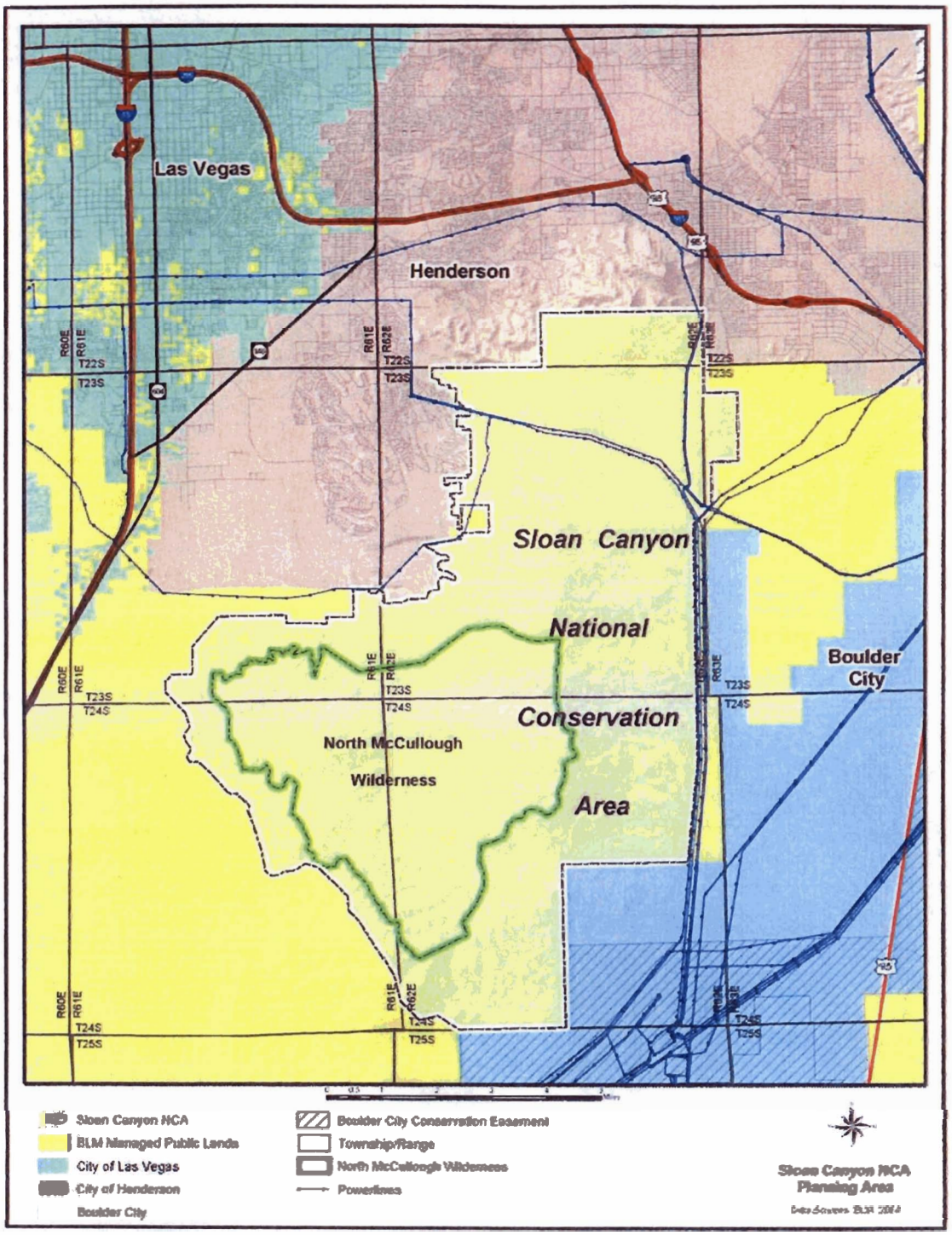
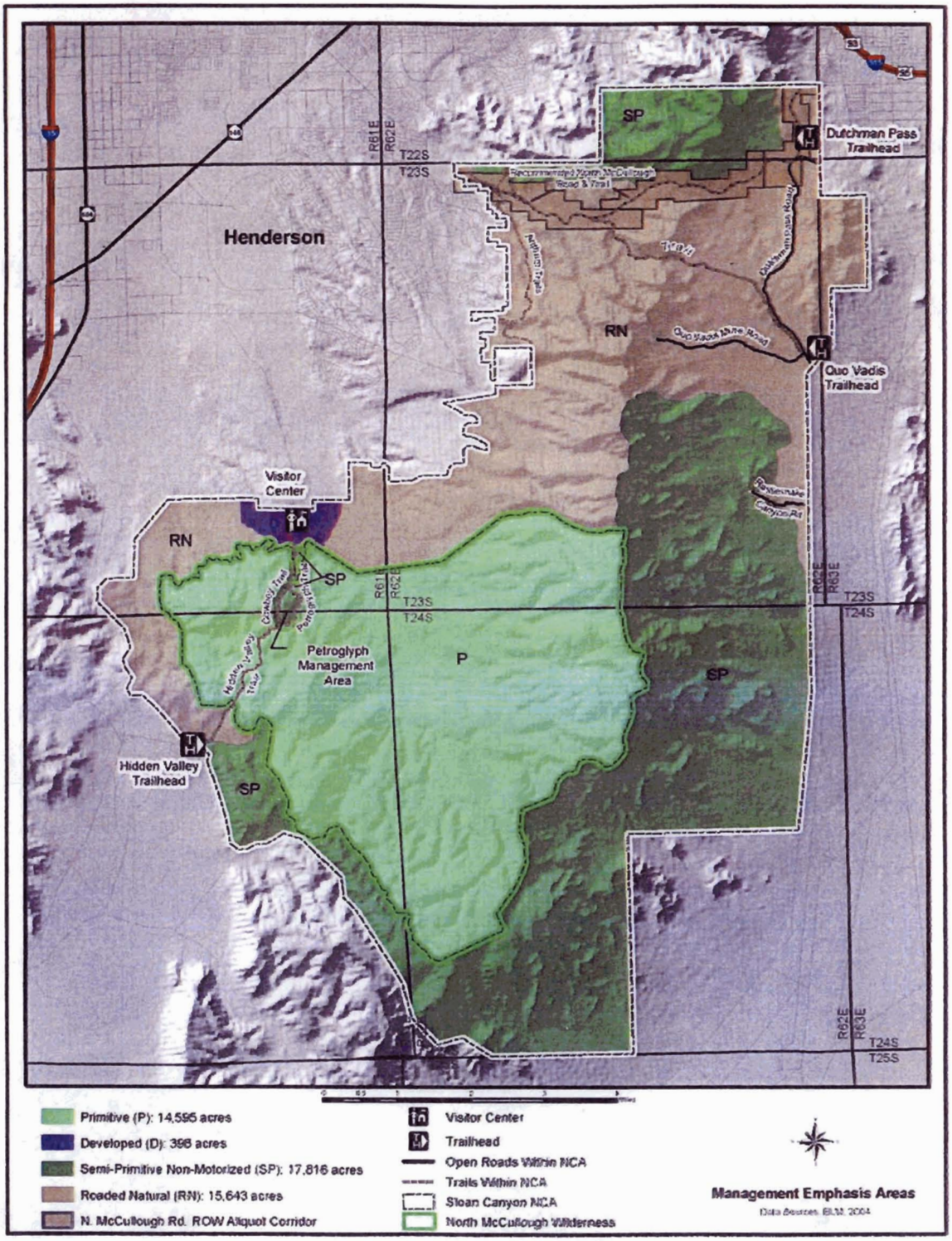


Figure 3. Management Emphasis Areas



Programs Proposed for Implementation under the Sloan Canyon NCA RMP

The BLM identified five program areas in the Sloan Canyon RMP that may include activities that may result in adverse effects to the desert tortoise in the Sloan Canyon NCA. Within the North McCullough Wilderness, such actions are primarily recreation-related, but also include livestock grazing. BLM's consultation responsibilities for management of livestock within the Hidden Valley Allotment, the only allotment in the NCA, were fulfilled by the 1998 programmatic consultation for lands administered by BLM's RMP for Las Vegas (Biological Opinion No. 1-5-98-F-053, as amended), which remains valid. BLM proposes no new range improvements for livestock grazing within the NCA. Wildfire suppression activities will occur in accordance with BLM's 2004 Fire Management Plan and will not be addressed in this consultation.

The five programs of activities proposed in the RMP are discussed below:

1. Recreation and Visitor Management

BLM anticipates that the recreation activities in the action area would include hiking, mountain biking, equestrian use, rock-climbing, dog exercise, hunting, nature study, sightseeing, and dispersed camping. Special Recreation Permits (SRP) would be issued on a case-by-case basis. No vending or competitive SRPs would be issued for the Wilderness. Geo-caching, recreational target shooting, rock hounding, and off-highway vehicle (OHV) use would not be allowed in the Sloan Canyon NCA. Dogs would be allowed on a leash in designated areas only. Dogs would be required to be on-leash in designated areas and prohibited in the remainder of the NCA; animal waste will be removed by the individual responsible for controlling the dog.

Visitation and resource monitoring would be used to assess and establish the baseline resource conditions for the NCA, then document any changes to the baseline. Once the resource baselines are determined, a system such as Limits of Acceptable Change may be used to establish thresholds for future actions.

a. *Hiking and trails*: Cross-country hiking may be allowed in designated areas throughout the NCA until trails are designated and constructed, after which time hikers will be required to stay on trails in the areas of the NCA as designated in the RMP. Six new trails are proposed in the NCA: (1) Petroglyph Hiking Trail, (2) Cowboy Hiking Trail, (3) Hidden Hiking and Equestrian Trail, (4) Anthem Hiking and Biking Trail, (5) North McCullough Hiking, Biking, and Equestrian Trail, and (6) and an unnamed hiking, biking, and equestrian trail associated with the east-west powerline road. Additional trails may be added to the NCA as needed, provided their design and construction would not substantially impact the NCA resources. Cross-country hiking will continue to be allowed in other areas. No new trail development is permitted without BLM authorization. An

interdisciplinary BLM team will review all new construction. All trails would be monitored and additional protective measures will be implemented as needed. BLM will evaluate all existing unauthorized or social trails and determine if they are to be closed and rehabilitated, or adopted into the trail system.

b. *Equestrian use:* Cross-country equestrian use may be allowed in designated areas until trails are designated and constructed, after which time equestrian users will be required to stay on trails in the areas of the NCA as designated in the RMP. Cross-country equestrian use will continue to be allowed in other areas. Animal waste will be removed from the trailheads by the responsible recreationists. Horse feed and hay must be certified weed-free.

c. *Mountain bike use:* The use of mountain bikes is restricted to the designated roads and trails. Cross-country mountain bike use, as well as use in the North McCullough Wilderness, is prohibited.

d. *Camping:* Primitive, dispersed camping would be allowed in designated areas of the NCA. Campfires would be allowed only at camping sites, using fire pans or fire blankets, and all fuels would be required to be packed in and out. No natural fuels in the NCA could be used for campfires, thus BLM encourages the use of portable stoves.

2. Transportation

Potential access points into the NCA include the northern access to Sloan Canyon, Hidden Valley, Dutchman Pass, Quo Vadis, and Sutor Hills. A 20 acre visitor center may be constructed near the NCA boundary at the northern entrance to the NCA to also serve as an access point to the Sloan Canyon Petroglyph Site, and provide onsite resource protection and interpretation. The Hidden Valley Trailhead development may result in less than 0.5 acre of disturbance which includes a developed trailhead with a gravel parking lot to accommodate 15 cars, an interpretive kiosk, and a vault toilet. Dutchman Pass Trailhead may result in 0.5 acre of disturbance which may include a developed trailhead, a gravel parking lot to accommodate 30 cars, an equestrian staging area, an interpretive kiosk, and a vault toilet. The Quo Vadis access point may include a developed trailhead, a 0.5 acre gravel parking, an interpretive kiosk, and a vault toilet. The Sutor Hills access point may include a developed trailhead, a gravel parking to accommodate five cars, an interpretive kiosk, and a vault toilet; total disturbance is estimated at 0.1 acre. No new access roads are proposed except for the congressionally mandated north McCullough Road.

Occasionally, unauthorized cross-country driving or vehicle-dumping occurs within the NCA. These incidents are typically handled by law enforcement through such means as

vehicle recovery and photography. In some cases, the recovery actions can create a greater degree of habitat disturbance than the initial trespass action; however, these actions are pursued with restoration at the cost of the trespasser.

3. Permits (Commercial, Filming or Research Monitoring)

Special Recreation Permits may be issued for all commercial trail guiding operations. No filming, competitive, or vending SRPs will be issued for activities within wilderness. *Competitive* SRPs are issued for events and activities that include an element of competition such as a running race. *Vending* SRPs are temporary authorizations to sell goods or services on public lands, and are typically issued in conjunction with a recreation activity. Permitted filming activities will be limited to designated trails and trailheads and up to 15 people.

4. Habitat Restoration, Weed-Control, and Wildlife Management

BLM proposes to manage vegetation to promote native plant communities and restore the plant productivity of disturbed areas (Appendix H). The Proposed RMP/EIS includes a Vegetation Restoration Strategy which describes BLM's vegetation restoration activities including project prioritization, restoration methods, and existing and future disturbance. In the Strategy, BLM proposes to manage noxious weeds in accordance with integrated weed management principles and the general restoration strategy for BLM's Las Vegas Field Office.

BLM proposes to maintain existing wildlife water developments consistent with the Memorandum of Understanding between BLM and the Nevada Department of Wildlife for wildlife management in the Wilderness. BLM may authorize animal damage control activities as a management tool, which may include removal of feral animals such as wild horses and burros. BLM proposes to conduct wildlife monitoring surveys in the NCA and provide interpretive information to the public. BLM proposes to rehabilitate existing disturbances that are no longer in use, including closed roads.

5. Lands, Realty, and Mineral Development

BLM will consider applications for new rights-of-way or amendments to existing rights-of-way on a case-by-case basis within the NCA, if the action furthers the purpose of the NCA. No areas within the NCA are proposed for disposal. Any released hazardous materials would be removed and remediated. No economic metallic minerals, uranium, thorium, or economically viable nonmetallic mineral deposits have been found within the NCA. Except for valid, existing rights, all public land is withdrawn from location, entry, and patent under the mining laws, and operation of the mineral and geothermal leasing laws. Within the NCA boundary, there are 11 active mining claims, 9 of which are not

validated. BLM does not anticipate any mineral development within the NCA during the term of this consultation. Abandoned mines may be closed and backfilled.

Proposed Conservation Measures

The Service anticipates that BLM will request that specific projects or actions be included as an appendix to this programmatic biological opinion (*i.e.,* appended) in accordance with Service guidance on programmatic consultation procedures. The measures below are proposed by BLM at the program level, to minimize potential effects of future actions appended to this biological opinion, as determined appropriate. When a future action is identified for inclusion under this programmatic consultation, BLM will recommend project-specific measures which may be a subset of the measures below and may include additional measures that BLM has determined are appropriate to minimize the potential effects of the action. In response, the Service will incorporate the appropriate recommended measures, as well as any additional measures or modifications of the proposed measures, into project-specific terms and conditions. The measures below demonstrate BLM's commitment to minimize the potential effects of future actions and are part of the analysis of effects of programmatic activities on the desert tortoise.

***Proposed Measures for All Activities*:**

1. *Speed limit:* Within Clark County, the speed limit is 25 miles-per-hour on unposted county roads; this speed will be established for all activities at all times unless otherwise designated.

2. V*ehicles:* All project/event-related individuals shall check underneath stationary vehicles before moving them.

3. *Vehicle traffic*: Shall be restricted to designated roads, except for emergency and administrative-related traffic.

4. *Litter-control*: Will be implemented and enforced by the project proponent or BLM. Trash containers shall remain covered, must be raven-proof, and emptied frequently enough to prevent overflow of materials. Trash, litter, project debris, etc. shall be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.

5. *Tortoise mortality/injury:* BLM wildlife staff (702/515-5000) and the Service (702/515-5230) must be notified of any desert tortoise death or injury in the NCA by close of business on the following work day. In addition, the Service's Division of Law Enforcement shall be notified in accordance with the reporting requirements of this biological opinion.

6. *Tortoise activity:* The period of greatest tortoise activity is generally defined as March 1 – October 31. However, unseasonably warm weather and/or precipitation outside this period may result in tortoise activity, particularly by hatchling and juvenile tortoise, and thus warrant adherence to requirements established for periods of greater activity. Similarly, BLM may determine that additional measures are appropriate for projects planned for the end or beginning of either period if conditions are suitable for desert tortoises to be active.

7. *Education Program:* A BLM or Service-approved biologist (as defined below) shall facilitate a tortoise education program to all supervisors, workers, permittees and other employees or participants involved in projects covered under the Sloan Canyon NCA RMP. The program will consist of either a presentation or fact sheet as determined by project-level consultation between BLM and the Service, and will include information on the life history of the desert tortoise, legal protection for desert tortoises, penalties for violations of Federal and State laws, general tortoise activity patterns, reporting requirements, measures to protect tortoises, terms and conditions of the biological opinion, and personal measures employees can take to promote the conservation of desert tortoises. "Take," which is defined to include any harm or harassment to desert tortoise, including significant habitat modification, will also be explained. Workers and project associates will be encouraged to carpool to and from the project sites. Specific and detailed instructions will be provided on the proper techniques for capturing and moving tortoises which appear onsite if appropriate. These instructions will be in accordance with Service-approved protocol. Currently, the Service-approved protocol is Desert Tortoise Council 1994, revised 1999.

8. *Biologist approval:* BLM and Service wildlife staff must approve the biologists who would be assigned to implement the terms and conditions of the biological opinion, or permit issued by BLM. Any biologist not previously approved must submit a statement of qualifications in the Service-developed format and be approved by the wildlife staff, before authorized to represent BLM in meeting compliance with the terms and conditions of the biological opinion. Other personnel may assist with implementing conservation measures, but must be under direct field supervision by the authorized biologist.

9. *Biologist qualifications:* In accordance with *Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise* (Service 1992), an authorized desert tortoise biologist should possess a bachelor's degree in biology, ecology, wildlife biology, herpetology, or closely related fields as determined by BLM and the Service. The biologist must have demonstrated prior field experience using accepted resource agency techniques to survey for desert tortoises and tortoise sign, which should include a minimum of 60 days field experience. All tortoise

biologists shall comply with the Service-approved handling protocol (Desert Tortoise Council 1994, revised 1999). In addition, the biologist shall have the ability to recognize and accurately record survey results and must be familiar with the terms and conditions of the biological opinion that resulted from project-level consultation between BLM and the Service.

10. *Tortoises in harm's way:* If a tortoise is found within the project/activity site in harm's way, all potentially harmful activity shall cease until the tortoise moves or is moved out of harm's way by an authorized biologist. If a desert tortoise is in *imminent danger*, the tortoise shall be moved out of harm's way and on to adjacent BLM land, using techniques described in the tortoise education program.

11. *Moving tortoises:* Tortoises that are moved offsite and released into undisturbed habitat on public land, must be placed in the shade of a shrub, in a natural unoccupied burrow similar to the hibernaculum in which it was found, or in an artificially constructed burrow in accordance with the tortoise handling protocol. Tortoises encountered shall be treated in a manner consistent with the appropriate measures in this biological opinion.

12. *Permits:* All appropriate State and Federal permits, including NDOW permits for handling desert tortoises or their parts, must be acquired by the tortoise biologists or other personnel before project initiation and prior to handling any desert tortoise or their parts, or conducting any activity requiring a permit.

13. *Project oversight:* One or more BLM representatives shall be designated who will be responsible for overseeing compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements identified in this biological opinion. The designated representatives shall provide coordination among the permittee, project proponent, BLM, and the Service.

14. *Desert tortoise burrows*: Will be avoided whenever possible; if not, the burrow will be cleared in accordance with the measures set forth in this biological opinion.

15. *Heat stress:* Desert tortoises encountered experiencing heat stress will be placed in a tub, by an authorized tortoise biologist, with one inch of 76-90°F (24-32°C) water for at least 20 minutes or until heat stress symptoms are no longer evident.

16. *Temperature restrictions:* Desert tortoises shall be treated in a manner to ensure that they do not overheat, exhibit signs of overheating (*e.g.*, gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and

core temperatures necessary to their well-being. Desert tortoises shall be kept shaded at all times until it is safe to release them. No desert tortoise shall be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95°F (35°C). Ambient air temperature shall be measured in the shade, protected from wind, at a height of 2 inches (5 centimeters) above the ground surface. No desert tortoise shall be captured if the ambient air temperature is anticipated to exceed 95°F (35°C) before handling and relocation can be completed. If the ambient air temperature exceeds 95°F (35°C) during handling or processing, desert tortoises shall be kept shaded in an environment that does not exceed 95°F (35°C), and the animals shall not be released until ambient air temperature declines to below 95°F (35°C).

17. *Reporting:* Within 30 days of completion of a project, the project proponent, permittee, or BLM must submit a document to a BLM wildlife biologist showing the number of acres disturbed, remuneration fees paid, and number of tortoises observed or taken, which includes capture and displacement, killed, injured, or harassed by other means, during implementation of programmatic actions.

18. *Previous disturbance:* Overnight parking and storage of equipment and materials, including stockpiling, shall be within previously disturbed areas or within areas cleared by a tortoise biologist to minimize habitat destruction.

19. *Project boundaries:* Project activity areas will be clearly marked or flagged at the outer boundaries before the onset of construction. All activities shall be confined to designated areas. When new access routes have been identified for development, the tortoise biologist will flag routes before surface disturbance.

Proposed Measures for Actions Involving Ground Disturbance:

20. *Blading of vegetation:* Will occur only to the extent necessary and shall be limited to areas designated for that purpose by BLM or a tortoise biologist.

21. *Fees:* Before issuance of authorization, and before any surface-disturbing activity, BLM or the project proponent shall pay a remuneration fee ($705 per acre of surface disturbance, if paid prior to March 1, 2007). This rate is indexed annually for inflation based on the Bureau of Labor Statistics Consumer Price index for All Urban Consumers (CPI-U). Information on the CPI-U can be found on the internet at *http://stats.bls.gov/news.release/cpi.nws.htm*. An exception to the requirement is made if the disturbance for the project is less than 0.25 acre of disturbance or for activities that result in a long term benefit for the species (*e.g.,*

trail realignment to minimize habitat impacts). Fee payment shall be submitted with the completed form in Attachment C.

22. *Notification:* The project applicant/BLM lead shall notify the BLM wildlife staff representative responsible for NEPA review of the project, at least 10 days before initiation of the project (702 515-5000).

23. *Clearance:* All project areas, fence lines, staging areas, etc. will be cleared of tortoises by an authorized biologist immediately before the start of ground disturbance using 100-percent coverage survey techniques. During the tortoise active season, an authorized tortoise biologist will be onsite during fence construction to ensure that no tortoises are harmed. Burrows found outside the area to be disturbed, will be flagged and avoided. Clearance will involve excavating nests; relocating eggs; flagging avoidable burrows; collapsing unavoidable, unoccupied burrows; and relocating tortoises in accordance with the Service-approved protocol for handling desert tortoises (Desert Tortoise Council 1994, revised 1999). If disturbance is planned to occur during a period when tortoise are not anticipated to be active, surveys may be conducted earlier as determined during project-specific consultation.

24. *Fencing:* The height of all tortoise-proof fencing will be a minimum of 18 inches above ground. Fencing may be permanent or temporary as determined on a project-level basis. Temporary fence design should consist of 1-inch horizontal by 2-inch vertical mesh (hardware cloth or plastic) and be installed flush with the ground. Temporary tortoise-proof fencing should not be buried unless otherwise directed by BLM. Permanent tortoise-proof fencing will consist of 1-inch horizontal by 2-inch vertical wire mesh. Where feasible, the fence will be buried 6 to 12 inches below ground. In situations where it is not feasible to bury the fence, the lower 12 inches of the fence shall be bent at a 90-degree angle towards the potential direction of encounter with tortoise and covered with cobble or other suitable material, to ensure that tortoise or other animals cannot dig underneath and create gaps through which tortoises may traverse.

25. *Clearance following fence construction:* Prior to the commencement of project activities, all desert tortoises shall be removed from the site. An authorized biologist shall oversee the survey for and removal of tortoises using techniques providing 100-percent coverage of all areas. Two complete passes of 100-percent coverage will be accomplished. If on the second pass, additional tortoises are encountered, a third pass will be conducted. Clearance of the fenced area will involve activities described in Measure 23 above.

During Ground Disturbing Activities:

26. *Fence inspection/maintenance:* Fencing will be inspected daily and zero clearance will be maintained between the bottom of the fence and the ground to ensure any bent portions are properly covered. Additional monitoring and maintenance shall include regular removal of trash and sediment accumulation, and checking for rodent damage or other breeches when using temporary tortoise-proof fencing.

27. *On-site biologist:* Unless the area has been fenced and cleared, or the Service and BLM have determined an onsite biologist is not necessary through project-level consultation, the project will require at least one authorized biologist onsite for project construction during the period of greatest tortoise activity (*e.g.,* March 1 through October 31). The biologist shall be on-call at other times.

Following Termination of Ground Disturbing Activities:

28. *Fence removal:* Temporary fencing will be removed at the end of the construction activity. Permanent fencing may be removed upon termination and reclamation of the project, or when it is determined by BLM and the Service that the fence is no longer necessary.

29. *Restoration:* Temporary disturbance areas will be restored in accordance with the restoration protocols for the project.

Proposed Measures for Activities that Involve Maintenance or Modification of Existing Sites and Limited to Existing Disturbed Areas Adjacent to Tortoise Habitat:

30. *Clearance - barren/unsuitable areas:* All project areas that are barren or unsuitable for tortoises but occur adjacent to creosote-bursage or Mojave mixed scrub vegetation, will be cleared by an authorized biologist before the start of maintenance or modification. Surveys for such clearance will use 100-percent coverage survey techniques and survey/clearance will be performed no more than three days before the initiation of construction. Areas within blackbrush will be cleared only if reconnaissance surveys reveal tortoise sign within the project area.

31. *Fence high-risk areas:* If activities are expected to occur during the tortoise active season, and it is determined there is a high risk to tortoises (*e.g.*, a tortoise has been found within 1,000 feet of the project area or heavy machinery is used), the project area will be fenced with tortoise-proof fencing in accordance with Measures 23, 24, 25, 26, and 27 above.

32. *On-site biologist:* Unless the project area has been fenced and cleared; a survey has been conducted and determined that no tortoises or active burrows are within 1,000 feet of the project area; or the Service and BLM have determined an onsite biologist is not necessary, the project will require an authorized biologist(s) on-site for project construction during the period of greatest tortoise activity (*e.g.,* March 1 through October 31), and on-call at other times.

Proposed Measures for Permits:

33. *Unauthorized introductions:* The permittee shall not damage, collect, or introduce plants or animals to any location, unless specifically permitted by BLM.

34. *Existing disturbance:* All motorized vehicles, parking and activities are restricted to existing roads and existing disturbed areas; no additional ground disturbance will be allowed.

35. *Marking/infrastructure:* Painting of rocks or establishment of permanent markers or installation of permanent infrastructure is not allowed as part of these activities.

36. *Removal of materials:* The applicant is responsible for removal of any project-related materials such as flagging and markers immediately after any event or activity.

37. *Compliance:* If this project involves studies affecting species protected by the Migratory Bird Treaty Act or Endangered Species Act, before implementation of research, inventory or monitoring, proof of the Service permit authorizing this activity must be provided to BLM at:

    Bureau of Land Management
    Renewable Resources, Attn: Wildlife Staff
    4701 N. Torrey Pines Drive
    Las Vegas, Nevada 89130

38. *Reports:* Reports will be submitted to the BLM wildlife staff representative at the end of the permit period (or annually for multiple-year permits) showing the number of desert tortoises injured, killed, collected, encountered or moved as a result of the permitted activity. Additional information for collections and research permits would include the UTM coordinates or GIS coverage of the collection sites, and the number and location of species collected, associated with permitted activities.

39. *Provide data:* For research, inventory, or monitoring to collect data on desert tortoises, a copy of the study results, including any management recommendations will be submitted to the Service and the BLM wildlife staff representative upon completion of the project to aid in recovery and future management of the tortoise and its habitat.

40. *Weed-free hay and removal of waste*: Only certified weed-free hay may be used by permittees and participants associated with equestrian use. Horse and pack animal waste will be removed in trailhead areas.

41. *Temporary water troughs:* Any temporary water troughs will be removed upon conclusion of the event. If drained onsite, they will be drained in such a way as to minimize disturbance to natural wash systems.

***Proposed Measures for Restoration Activities and Mechanical Weed Treatments*:**

42. *Clearance:* All sites including cross-country access routes and staging areas will be cleared in accordance with Measure 23 and/or 30.

43. *On-site biologist or fence/clearance:* For restoration actions and weed treatment when mechanical treatments are employed, an authorized biologist must be present during periods of tortoise activity (generally from March 1 through October 31) to insure that desert tortoises are not inadvertently harmed. As an alternative to having a biologist onsite, the area may be temporarily fenced with tortoise-proof fencing. If temporary fencing is constructed, the fence line shall be surveyed by a tortoise biologist before construction of the fence. The area within the fence will be surveyed for, and cleared of desert tortoises after construction of the fence to insure that no tortoises are trapped inside the fence.

44. *Project access, vehicles:* All vehicle traffic will be restricted to designated roads except for emergency or administrative purposes in which new access routes will be created when absolutely necessary, and for which disturbance will be minimized by using the least disruptive that can accomplish the job. If there is no existing access to the site, it would not be treated or restored unless it is a hazard to desert tortoises (*e.g.*, pits or holes which may trap animals).

Proposed Measures for Wildlife Management Activities:

45. *Vehicles, access:* All vehicle use in desert tortoise habitat for these actions shall be restricted to existing roads, trails, large sandy washes, and ways. No new access roads shall be created.

46. *Disturbance:* Activities that involve ground disturbance, such as installation of water sources, fences, or other infrastructure shall comply with the proposed measures for ground-disturbing actions.

II. Status of the Species/Critical Habitat Rangewide

On August 4, 1989, the Service published an emergency rule listing the Mojave population of the desert tortoise as endangered (54 FR 42270). On April 2, 1990, the Service determined the Mojave population of the desert tortoise to be threatened (55 FR 12178). Reasons for the determination included significant population declines, loss of habitat from construction projects such as roads, housing and energy developments, and conversion of native habitat to agriculture. Grazing and OHV activity have degraded additional habitat. Also cited as threatening the desert tortoise's continuing existence were illegal collection by humans for pets or consumption, upper respiratory tract disease (URTD), predation on juvenile desert tortoises by common ravens, coyotes (*Canis latrans*), and kit foxes (*Vulpes macrotis*), fire, and collisions with vehicles on paved and unpaved roads.

On June 28, 1994, the Service approved the final Desert Tortoise (Mojave Population) Recovery Plan (Recovery Plan) (Service 1994). The Recovery Plan divides the range of the desert tortoise into 6 recovery units and recommends establishment of 14 Desert Wildlife Management Areas (DWMAs) throughout the recovery units. Within each DWMA, the Recovery Plan recommends implementation of reserve-level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. The design of DWMAs should follow accepted concepts of reserve design. As part of the actions needed to accomplish recovery, the Recovery Plan recommends that land management within all DWMAs should restrict human activities that negatively impact desert tortoises (Service 1994). The DWMAs/Areas of Critical Environmental Concern (ACECs) have been designated by BLM through development or modification of their land-use plans in Arizona, Nevada, Utah, and parts of California.

The California Desert Conservation Area Plan (BLM 1980) as amended, is the primary plan that guides the overall management of desert tortoise habitat in California. Land-use planning activities are underway in California to complete designation of DWMAs/ACECs. Desert tortoise habitat management in Arizona is covered primarily by the Mojave Amendment to BLM's Arizona Strip Resource Management Plan, which was prepared to implement the Recovery Plan. BLM's Arizona Strip Field Office designated 167,065 acres of desert tortoise habitat as ACECs. In Nevada, BLM's Las Vegas, Ely, and Battle Mountain field offices manage desert tortoise habitat; 941,800 acres of desert tortoise habitat were designated as ACECs by the Las Vegas and Ely field offices. No desert tortoise critical habitat or proposed ACECs occur within the jurisdiction of the Battle Mountain Field Office. The regulation of activities within critical habitat through section 7 consultation is based on recommendations in the Recovery Plan (Service 1994).

Long-term monitoring of desert tortoise populations is a high priority recovery task as identified in the Recovery Plan. From 1995 to 1998, pilot field studies and workshops were conducted to develop a monitoring program for desert tortoise. In 1998, the Desert Tortoise Management Oversight Group identified line distance sampling as the appropriate method to determine rangewide desert tortoise population densities and trends. Monitoring of populations using this method is underway across the range of the desert tortoise. Successful rangewide monitoring will enable managers to evaluate the overall effectiveness of recovery actions and population responses to these actions, thus guiding recovery of the Mojave desert tortoise. Rangewide tortoise population monitoring began in 2001 and is conducted annually.

Species Account

The desert tortoise is a large, herbivorous reptile found in portions of California, Arizona, Nevada, and Utah. It also occurs in Sonora and Sinaloa, Mexico. The Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, southwestern Utah, and in the Sonoran Desert in California. Desert tortoises reach 8 to 15 inches in carapace length. Adults have a domed carapace and relatively flat, unhinged plastron. Shell color is brownish, with yellow to tan scute centers. The forelimbs are flattened and adapted for digging and burrowing. Optimal habitat has been characterized as creosote bush scrub in which precipitation ranges from 2 to 8 inches, where a diversity of perennial plants is relatively high, and production of ephemerals is high (Luckenbach 1982; Turner 1982; Turner and Brown 1982). Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. Desert tortoises occur from below sea level to an elevation of 7,300 feet, but the most favorable habitat occurs at elevations of approximately 1,000 to 3,000 feet (Luckenbach 1982). Maximum longevity in the wild is likely to be about 50 to 70 years, the norm being 25 to 35 years (Germano 1992, 1994 in Boarman 2002a).

Tortoise activity patterns are primarily controlled by ambient temperature and precipitation (Nagy and Medica 1986, Zimmerman *et al.* 1994). In the East Mojave and Colorado Deserts, annual precipitation occurs in both summer and winter, providing food and water to tortoises throughout much of the summer and fall. Most precipitation occurs in winter in the West Mojave Desert resulting in an abundance of annual spring vegetation, which dries up by late May or June. Tortoises in the West Mojave are primarily active in May and June, with a secondary activity period from September through October. Tortoises may also be active during periods of mild or rainy weather in summer and winter. During inactive periods, tortoises rest in subterranean burrows or caliche caves, and spend approximately 98 percent of the time in these shelter sites (Nagy and Medica 1986). During active periods, they usually spend nights and the hotter part of the day in their burrow; they may also rest under shrubs or in shallow burrows (pallets). Tortoises may use an average of 7 to 12 burrows at any given time (Barrett 1990, Bulova 1994, TRW Environmental Safety Systems Inc.1997).

Walde *et al* (2003) observed that desert tortoises retreated into burrows when air temperature reached 91.0° F (32.8°C) ± 3.55° F (1.97°C) and ground temperatures reached 94.6° F (34.8°C) ± 6.05° F (3.36°C); 95 percent of desert tortoise observations of desert tortoises above ground occurred at air temperature less than 91° F (33°C). The body temperature at which desert tortoises become incapacitated ranges from 101.5° F (38.6°C) to 113.2° F (45.1°C) (Naegle 1976, Zimmerman *et al.* 1994).

Desert tortoises are most commonly found within the desert scrub vegetation type, primarily in creosote bush scrub. In addition, they occur in succulent scrub, cheesebush scrub, blackbrush scrub, hopsage scrub, shadscale scrub, microphyll woodland, Mojave saltbush-allscale scrub and scrub-steppe vegetation types of the desert and semidesert grassland complex (Service 1994). Within these vegetation types, desert tortoises potentially can survive and reproduce where their basic habitat requirements are met. These requirements include a sufficient amount and quality of forage species; shelter sites for protection from predators and environmental extremes; suitable substrates for burrowing, nesting, and overwintering; various plants for shelter; and adequate area for movement, dispersal, and gene flow. Throughout most of the Mojave Region, tortoises occur most commonly on gently sloping terrain with soils ranging from sandy-gravel and with scattered shrubs, and where there is abundant inter-shrub space for growth of herbaceous plants. Throughout their range, however, tortoises can be found in steeper, rockier areas.

Although desert tortoises eat alien plants, they generally prefer native forbs when available (Jennings 1993, Avery 1998). Consumption of alien plants may place them at a nitrogen and water deficit (Henen 1997). Droughts frequently occur in the desert, resulting in extended periods of low water availability. Periods of extended drought place tortoises at even greater water and nitrogen deficit than during moderate or high rainfall years (Peterson 1996, Henen 1997). During a drought, more nitrogen than normal is required to excrete nitrogenous wastes, thus more rapidly depleting nitrogen stored in body tissues. Plants also play important roles in stabilizing soil and providing cover for protection from predators and heat.

Tortoise activities are concentrated in overlapping core areas, known as home ranges. Because tortoises do not defend a specific, exclusive area, they do not maintain territories. The size of desert tortoise home ranges varies with respect to location and year. Female home ranges are approximately half that of the average male, which range from 25 to 200 acres (Berry 1986). Over its lifetime, each desert tortoise may require more than 1.5 square miles of habitat and make forays of more than 7 miles at a time (Berry 1986). In drought years, the ability of tortoises to drink while surface water is available following rains may be crucial for tortoise survival. During droughts, tortoises forage over larger areas, increasing the likelihood of encounters with sources of injury or mortality including humans and other predators.

Changing ecological condition as a result of natural events or human-caused activities may stress individuals and result in a more severe clinical expression of URTD (Brown *et al.* 2002). For

example, the proliferation of non-native plants within the range of the tortoise has had far-reaching impacts on tortoise populations. Tortoises have been found to prefer native vegetation over non-natives (Tracy *et al.* 2004). Non-native annual plants in desert tortoise critical habitat in the western Mojave Desert were found to compose over 60 percent of the annual biomass (Brooks 1998). The reduction in quantity and quality of forage may stress tortoises and make them more susceptible to drought- and disease-related mortality (Brown *et al.* 1994). Malnutrition has been associated with several disease outbreaks in both humans and turtles (Borysenko and Lewis 1979). What is currently known with certainty about disease in the desert tortoise relates entirely to individual tortoises and not populations; virtually nothing is known about the demographic consequences of disease (Tracy *et al.* 2004).

Further information on the range, biology, and ecology of the desert tortoise can be found in Berry and Burge (1984), Brooks *et al.* 2003, Burge (1978), Burge and Bradley (1976), Bury *et al.* (1994), Germano *et al.* (1994), Hovik and Hardenbrook (1989), Jennings (1997), Karl (1981, 1983a, 1983b), Luckenbach (1982), Service (1994), and Weinstein *et al.* (1987).

a. Desert Tortoise Recovery Plan Assessment and Recommendations

The General Accounting Office (GAO) Report, *Endangered Species: Research Strategy and Long-Term Monitoring Needed for the Mojave Desert Tortoise Recovery Program* (U.S. General Accounting Office 2002), directed the Service to periodically reassess the Recovery Plan to determine whether scientific information developed since its publication could alter implementation actions or allay some of the uncertainties about its recommendations. In response to the GAO report, the Service initiated a review of the existing Recovery Plan in 2003. In March 2003, the Service impaneled the Desert Tortoise Recovery Plan Assessment Committee (Committee) to assess the Recovery Plan. The Committee was selected to represent several important characteristics with particular emphasis on commitment to solid science. The charge to the Committee was to review the entire Recovery Plan in relation to contemporary knowledge to determine which parts of the recovery plan will need updating. The recommendations of the Committee were presented to the Service and Desert Tortoise Management Oversight Group on March 24, 2004. The recommendations will be used as a guide by a recovery team of scientists and stakeholders to modify the 1994 Recovery Plan. A revised recovery plan is anticipated by the end of 2006.

The Committee recognized that the distribution and abundance data indicate trends leading away from recovery goals in some parts of the species' range. These results indicate a need for more aggressive efforts to facilitate recovery. Many of the original prescriptions of the Recovery Plan were never implemented although these prescriptions continue to be appropriate. New prescriptions should be prioritized to assess redundancies and synergies within individual threats.

b. Recovery Units

The Northeastern Mojave Recovery Unit occurs primarily in Nevada, but it also extends into California along the Ivanpah Valley and into extreme southwestern Utah and northwestern Arizona. Vegetation within this unit is characterized by creosote bush scrub, big galleta-scrub steppe, desert needlegrass scrub-steppe, and blackbrush scrub (in higher elevations). Topography is varied, with flats, valleys, alluvial fans, washes, and rocky slopes. Much of the northern portion of the Northeastern Mojave Recovery Unit is characterized as basin and range, with elevations from 2,500 to 12,000 feet. Desert tortoises typically eat summer and winter annuals, cacti, and perennial grasses. Desert tortoises in this recovery unit, the northern portion of which represents the northernmost distribution of the species, are typically found in low densities (about 10 to 20 adults per square mile).

A kernel analysis was conducted in 2003-2004 for the desert tortoise (Tracy *et al.* 2004) as part of the reassessment of the 1994 Recovery Plan. The kernel analyses revealed several areas in which the kernel estimations for live tortoises and carcasses did not overlap. The pattern of non-overlapping kernels that is of greatest concern is those in which there were large areas where the kernels encompassed carcasses but not live animals. These regions represent areas within DWMAs where there were likely recent die-offs or declines in tortoise populations. The kernel analysis indicated large areas in the Piute-Eldorado Valley where there were carcasses but no live tortoises. For this entire area in 2001, there were 103 miles of transects walked, and a total of 6 live and 15 dead tortoises were found, resulting in a live encounter rate of 0.06 tortoises per mile of transect for this area. This encounter rate was among the lowest that year for any of the areas sampled in the range of the Mojave desert tortoise (Tracy *et al.* 2004).

Kernel analysis for the Coyote Springs DWMA showed areas where the distributions of carcasses and living tortoises do not overlap; however, densities of adult tortoises for the region do not show a statistical trend over time. Thus, while there may be a local die-off occurring in the northern portion of this DWMA, this does not appear to influence the overall trend in the region as interpreted by study plot data. Because permanent study plots for this region were discontinued after 1996, if there have been recent declines in numbers they are not reflected in the kernel analysis. Nevertheless, large regions of non-overlapping carcass and live tortoise kernels in the regions were not identified adjacent to the Coyote Springs DWMA. The probability of finding either a live tortoise or a carcass was relatively very low for Beaver Dam Slope and Gold-Butte Pakoon, and moderately low for Mormon Mesa/Coyote Springs.

The Eastern Mojave Recovery Unit is situated primarily in California, but also extends into Nevada in the Amargosa, Pahrump, and Piute valleys. In the Eastern Mojave Recovery Unit, desert tortoises are often active in late summer and early autumn in addition to spring because this region receives both winter and summer rains and supports two distinct annual floras on which they can feed. Desert tortoises in the Eastern Mojave Recovery Unit occupy a variety of vegetation types and feed on summer and winter annuals, cacti, perennial grasses, and

herbaceous perennials. They den singly in caliche caves, bajadas, and washes. This recovery unit is isolated from the Western Mojave Recovery Unit by the Baker Sink, a low-elevation, extremely hot and arid strip that extends from Death Valley to Bristol Dry Lake. The Baker Sink area is generally not considered suitable for desert tortoises. Desert tortoise densities in the Eastern Mojave Recovery Unit can vary dramatically, ranging from 5 to as much as 350 adults per square mile (Service 1994).

Ivanpah and Piute-Eldorado valleys contained study plots that were analyzed in the Eastern Mojave Recovery Unit analysis. While there was no overall statistical trend in adult density over time, the 2000 survey at Goffs and the 2002 survey at Shadow Valley indicate low densities of adult tortoises relative to earlier years. Unfortunately, there are no data in the latter years for all five study plots within this recovery unit, and therefore, while there is no statistical trend in adult densities, we cannot conclude that tortoises have not experienced recent declines in this area. The probability of finding a carcass on a distance sampling transect was considerably higher for Ivanpah, Chemehuevi, Fenner, and Piute-Eldorado, which make up the Eastern Mojave Recovery Unit.

The Northern Colorado Recovery Unit is located completely in California. Here desert tortoises are found in the valleys, on bajadas and desert pavements, and to a lesser extent in the broad, well-developed washes. They feed on both summer and winter annuals and den singly in burrows under shrubs, in intershrub spaces, and rarely in washes. The climate is somewhat warmer than in other recovery units, with only 2 to 12 freezing days per year. The tortoises have the California mitochondrial DNA (mtDNA) haplotype and phenotype. Allozyme frequencies differ significantly between this recovery unit and the Western Mojave, indicating some degree of reproductive isolation between the two.

Desert tortoises in the Eastern Colorado Recovery Unit, also located completely in California, occupy well-developed washes, desert pavements, piedmonts, and rocky slopes characterized by relatively species-rich succulent scrub, creosote bush scrub, and Blue Palo Verde-Ironwood-Smoke Tree communities. Winter burrows are generally shorter in length, and activity periods are longer than elsewhere due to mild winters and substantial summer precipitation. The tortoises feed on summer and winter annuals and some cacti; they den singly. They also have the California mtDNA haplotype and shell type.

The Upper Virgin River Recovery Unit encompasses all desert tortoise habitat in Washington County, Utah, except the Beaver Dam Slope, Utah population. The desert tortoise population in the area of St. George, Utah is at the extreme northeastern edge of the species' range and experiences long, cold winters (about 100 freezing days) and mild summers, during which the tortoises are continually active. Here the animals live in a complex topography consisting of canyons, mesas, sand dunes, and sandstone outcrops where the vegetation is a transitional mixture of sagebrush scrub, creosote bush scrub, blackbush scrub, and a psammophytic community. Desert tortoises use sandstone and lava caves instead of burrows, travel to sand

dunes for egg-laying, and use still other habitats for foraging. Two or more desert tortoises often use the same burrow. Shell morphology and mtDNA have not been studied in this recovery unit, but allozyme variation is similar to that found in the Northeastern Mojave Recovery Unit.

The Western Mojave Recovery Unit occurs completely in California and is exceptionally heterogeneous and large. It is composed of the Western Mojave, Southern Mojave, and Central Mojave regions, each of which has distinct climatic and vegetational characteristics. The most pronounced difference between the Western Mojave and other recovery units is in timing of rainfall and the resulting vegetation. Most rainfall occurs in fall and winter and produces winter annuals, which are the primary food source of tortoises. Above ground activity occurs primarily in spring, associated with winter annual production. Thus, tortoises are adapted to a regime of winter rains and rare summer storms. Here, desert tortoises occur primarily in valleys, on alluvial fans, bajadas, and rolling hills in saltbrush, creosote bush, and scrub steppe communities. Tortoises dig deep burrows (usually located under shrubs on bajadas) for winter hibernation and summer aestivation. These desert tortoises generally den singly. They have a California mtDNA haplotype and a California shell type.

c. Populations

Distribution: The prescriptions for recovery in the Recovery Plan were for individual populations and assumed that preserving large blocks of habitat and managing threats in that habitat would be principally all that would be necessary to recover the species. However, that original paradigm, and the prescriptions made within that paradigm, may be wrong. Existing data have revealed population crashes that have occurred asynchronously across the range. There are reports that some populations, which have crashed previously, have subsequently increased in population density. Additionally, all known dense populations of desert tortoises have crashed. This suggests that density-dependent mortality occurs in desert tortoise populations, and that population dynamics may be asynchronous.

These characteristics indicate that tortoises may exist in a classic metapopulation structure (Hanski 1999; Levins and Culver 1971; Levin *et al.* 1984), and this should portend profoundly different prescriptions for recovery. In particular, if desert tortoises have historically existed in metapopulations, then connections among habitat patches are a necessary part of conservation prescriptions. Additionally, habitat suitable for tortoises, but without tortoises, should be regarded as equally necessary for recovery. Long-term persistence cannot be determined from tortoise density or tortoise numbers alone, but assessment must include the complexities of metapopulation dynamics and the habitat characteristics that promote metapopulation dynamics including habitat connectivity through inefficient corridors (*i.e.*, partial connectivity), asynchrony of subpopulation dynamics, and several separate habitat patches. Some of the characteristics of proper metapopulation function may already have been obviated by proliferation of highways, and habitat fragmentation due to satellite urbanization. Thus, management may require artificially facilitating metapopulation processes such as movement among patches.

The genetic distinctness of tortoise populations and their pathogens should be assessed to guide all manipulative management actions (*e.g.*, head starting, translocation, habitat restoration, and corridor management). The Committee proposed a revision to the previous delineation of recovery units, or Distinct Population Segments (DPSs) based on new scientific information. The recommended delineations reflect the prevailing concepts of subpopulation "discreteness," and "significance," and incorporate morphological, behavioral, genetic, and environmental information. The Committee's recommendation reduces the number of DPSs from six to five by leaving the original Upper Virgin River and Western Mojave units intact and recombining the four central units into three reconfigured units: Lower Virgin River Desert, Northeastern Mojave Desert (including Amargosa Valley, Ivanpah Valley, and Shadow Valley), and Eastern Mojave and Colorado Desert. These recommended DPSs are based largely on the best resolving biochemical/genetic data of Rainboth *et al.* (1989), Lamb *et al.* (1989), Lamb and Lydehard (1994), and Britten *et al.* (1997). Because these delineations are general and not definitive at this time, more data and analyses are required which may result in additional modification. Although DPSs have been proposed by the Committee, no DPSs have been officially designated by the Service.

The 1994 Recovery Plan conceived desert tortoises to be distributed in large populations that required large areas and large densities to recover. However, existing data are consistent with the possibility that tortoises have evolved to exist in *metapopulations*. Metapopulation theory conceives that tortoises are distributed in metapopulation patches connected with corridors that allow inefficient and asynchronous movements of individuals among the patches. This paradigm conceives that some habitat patches within the range of the desert tortoise will have low population numbers or no tortoises at all, and others will have higher population numbers. Movement among the patches is necessary for persistence of the "system." If desert tortoises evolved to exist in metapopulations, then long-term persistence requires addressing habitat fragmentation caused by highways and satellite urbanization. Ensuring the integrity and function of natural corridors among habitat patches might require active management of tortoise densities in habitat patches and associated corridors.

Land managers and field scientists identified 116 species of alien plants in the Mojave and Colorado Deserts (Brooks and Esque 2002). The proliferation of non-native plant species has also contributed to an increase in fire frequency in tortoise habitat by providing sufficient fuel to carry fires, especially in the intershrub spaces that are mostly devoid of native vegetation (Service 1994; Brooks 1998; Brown and Minnich 1986). Changes in plant communities caused by alien plants and recurrent fire may negatively affect the desert tortoise by altering habitat structure and species composition of their food plants (Brooks and Esque 2002).

Numerous wildfires occurred in desert tortoise habitat across the range of the desert tortoise in 2005 due to abundant fuel from the proliferation of non-native plant species after a very wet winter. These wildfires heavily impacted two of the six desert tortoise recovery units, burning less than 19 percent of desert tortoise habitat in the Upper Virgin River and 10 percent in the

Northeastern Mojave (Table 1). In the Upper Virgin River Recovery Unit, 19 percent of the Upper Virgin River critical habitat unit (CHU) burned. In the Northeastern Mojave Recovery Unit, three CHUs were impacted: about 23 percent of the Beaver Dam Slope CHU burned, 13 percent of the Gold Butte-Pakoon CHU, and 4 percent of the Mormon Mesa CHU. Although it is known that tortoises were burned and killed by the wildfires, tortoise mortality estimates are not available at this time. Wildfires did not occur within the Sloan Canyon NCA in 2005.

Table 1. Acres of desert tortoise habitat burned in each recovery unit during 2005. Note all data is preliminary and needs further analysis.

Recovery Unit	Habitat Burned (acres)	Percent Habitat Burned	CH* Burned (acres)	Percent CH Burned
Upper Virgin River**	10,446	< 19	10,446	19
Northeastern Mojave***	500,000	10	124,782	11
Eastern Mojave	6,000	< 1	1,219	<1
Western Mojave	0	0	0	0
Northern Colorado	0	0	0	0
Eastern Colorado	0	0	0	0
Total	**516,446**	-	**136,447**	-

* CH – critical habitat
** Estimates only for Upper Virgin River; needs GIS analysis.
*** Potential habitat was mapped and calculated as Mojave Desert less than 4,200 feet in elevation minus playas, open water, and developed and agricultural lands.

Disease was identified in the 1994 Recovery Plan as an important threat to the desert tortoise. Disease is a natural phenomenon in wild populations of animals and can contribute to population declines by increasing mortality and reducing reproduction. However, URTD appears to be a complex, multi-factorial disease interacting with other stressors to affect desert tortoises (Brown *et al.* 2002; Tracy *et al.* 2004). The disease occurs mostly in relatively dense desert tortoise populations, as mycoplasmal infections are dependent upon higher densities of the host (Tracy *et al.* 2004).

Reproduction: Desert tortoises possess a combination of life history and reproductive characteristics that affect the ability of populations to survive external threats. Tortoises grow slowly, require 15 to 20 years to reach sexual maturity, and have low reproductive rates during a long period of reproductive potential (Turner *et al.* 1984; Bury 1987; Tracy *et al.* 2004).

Choice of mate is mediated by aggressive male-male interactions and possibly by female choice (Niblick *et al.* 1994). Tortoises in the West Mojave Desert may exhibit pre-breeding dispersal movements, typical of other vertebrates, ranging from 1 to 10 miles in a single season (Sazaki *et al.* 1995). The advantage of pre-breeding dispersal may be to find a more favorable environment

in which to reproduce. However, the risk is increased mortality from predation, exposure, starvation, or anthropogenic factors (*e.g.*, motor vehicle mortality).

The average clutch size is 4.5 eggs (range 1 to 8), with 0-3 clutches deposited per year (Turner *et al.* 1986). Clutch size and number probably depend on female size, water, and annual productivity of forage plants in the current and previous year (Turner *et a*l. 1984, 1986; Henen 1997). The ability to alter reproductive output in response to resource availability may allow individuals more options to ensure higher lifetime reproductive success. The interaction of longevity, late maturation, and relatively low annual reproductive output causes tortoise populations to recover slowly from natural or anthropogenic decreases in density. To ensure population stability or increase, these factors also require relatively high juvenile survivorship (75 to 98 percent per year), particularly when adult mortality is elevated (Congdon *et a*l. 1993). Most eggs are laid in spring (April through June) and occasionally in fall (September to October). Eggs are laid in sandy or friable soil, often at the entrance to burrows. Hatching occurs 90 to 120 days later, mostly in late summer and fall (mid-August to October). Eggs and young are untended by the parents.

Tortoise sex determination is environmentally controlled during incubation (Spotila *et al.* 1994). Hatchlings develop into females when the incubation (*i.e.*, soil) temperature is greater than 88.7° F (31.5° C) and males when the temperature is below that (Lance 2006). Mortality is higher when incubation temperatures are greater than 95.5° F (35.3° C) or less than 78.8° F (26.0° C). The sensitivity of embryonic tortoises to incubation temperature may make populations vulnerable to unusual changes in soil temperature (*e.g.*, from changes in vegetation cover).

At Yucca Mountain, Nye County Nevada (Northeastern Mojave Recovery Unit), Mueller *et al.* (1998) estimated that the mean age of first reproduction was 19 to 20 years; clutch size (1 to 10 eggs) and annual fecundity (0 to 16 eggs) were related to female size but annual clutch frequency (0 to 2) was not. Further, Mueller suggested that body condition during July to October may determine the number of eggs a tortoise can produce the following spring. McLuckie and Friedell (2002) determined that the Beaver Dam Slope desert tortoise population, within the Northeastern Mojave Recovery Unit, had a lower clutch frequency (1.33 ± 0.14) per reproductive female and fewer reproductive females (14 out of 21) when compared with other Mojave desert tortoise populations. In the 1990's, Beaver Dam Slope experienced dramatic population declines due primarily to disease and habitat degradation and alteration (Service 1994). The number of eggs that a female desert tortoise can produce in a season is dependent on a variety of factors including environment, habitat, availability of forage and drinking water, and physiological condition (Henen 1997; McLuckie and Fridell 2002).

Numbers: Data collected on 1-square-mile permanent study plots indicate that tortoise populations have declined both in numbers of tortoises found during surveys and in densities of live tortoises at most sites since the plots were first established 20-30 years ago (Berry *et al.*

2002). Declines of 50 to 96 percent have occurred regardless of initial tortoise densities. Increases in the occurrence of shell-skeletal remains have been found to correspond with declines in numbers and densities of live tortoises with the exception of certain plots where poaching has been documented (Berry 2003).

Results of desert tortoise surveys at three survey plots in Arizona indicate that all three sites have experienced significant die-offs. Six live tortoises were located in a 2001 survey of the Beaver Dam Slope Exclosure Plot (Walker and Woodman 2002). Three had definitive signs of URTD, and two of those also had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 31 live tortoises in 1996, 20 live tortoises in 1989, and 19 live tortoises in 1980. The 2001 survey report indicated that it is likely that there is no longer a reproductively viable population of tortoises on this study plot. Thirty-seven live tortoises were located in a 2002 survey of the Littlefield Plot (Young *et al.* 2002). None had definitive signs of URTD. Twenty-three tortoises had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 80 live tortoises in 1998 and 46 live tortoises in 1993. The survey report indicated that the site might be in the middle of a die-off due to the high number of carcasses found since the site was last surveyed in 1998. Nine live tortoises were located during the mark phase of a 2003 survey of the Virgin Slope Plot (Goodlett and Woodman 2003). The surveyors determined that the confidence intervals of the population estimate would be excessively wide and not lead to an accurate population estimate, so the recapture phase was not conducted. One tortoise had definitive signs of URTD. Seven tortoises had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 41 live tortoises in 1997 and 15 live tortoises in 1992. The survey report indicated that the site may be at the end of a die-off that began around 1996-1997.

The Western Mojave has experienced marked population declines as indicated in the Recovery Plan and continues today. Spatial analyses of the Western Mojave show areas with increased probabilities of encountering dead rather than live animals, areas where kernel estimates for carcasses exist in the absence of live animals, and extensive regions where there are clusters of carcasses where there are no clusters of live animals. Collectively, these analyses point generally toward the same areas within the Western Mojave, namely the northern portion of the Fremont-Kramer DWMA and the northwestern part of the Superior-Cronese DWMA. Together, these independent analyses, based on different combinations of data, all suggest the same conclusion for the Western Mojave. Data are not currently available with sufficient detail for most of the range of the desert tortoise with the exception of the Western Mojave (Tracy *et al.* 2004).

Declines in tortoise abundance appear to correspond with increased incidence of disease in tortoise populations. The Goffs permanent study plot in Ivanpah Valley, California, suffered 92 to 96 percent decreases in tortoise density between 1994 and 2000 (Berry 2003). The high prevalence of disease in Goffs tortoises likely contributed to this decline (Christopher *et al.* 2003). Upper respiratory tract disease has not yet been detected at permanent study plots in the Sonoran Desert of California, but is prevalent at study plots across the rest of the species' range (Berry 2003) and has been shown to be a contributing factor in population declines in the western

Mojave Desert (Brown *et al.* 2002; Christopher *et al.* 2003). High mortality rates at permanent study plots in the northeastern and eastern Mojave and Sonoran Deserts appear to be associated with incidence of shell diseases in tortoises (Jacobson *et al.* 1994). Low levels of shell diseases were detected in many populations when the plots were first established, but were found to increase during the 1980s and 1990s (Jacobson *et al.* 1994; Christopher *et al.* 2003). A herpesvirus has recently been discovered in desert tortoises, but little is known about its effects on tortoise populations at this time (Berry *et al.* 2002; Origgi *et al.* 2002).

The kernel analysis of the Eastern Colorado Recovery Unit shows that the distributions of the living tortoises and carcasses overlap for most of the region. The Chuckwalla Bench study plot occurs outside the study area, which creates a problem in evaluating what may be occurring in that area of the recovery unit. However, the few transects walked in that portion of the DWMA yielded no observations of live or dead tortoises. This illustrates our concern for drawing conclusions from areas represented by too few study plots and leaves us with guarded concern for this region. The percentage of transects with live animals was relatively high for most DWMAs within the Eastern Colorado Recovery Unit. In addition, the ratio of carcasses to live animals was low within this recovery unit relative to others.

There are many natural causes of mortality, but their extents are difficult to evaluate and vary from location to location. Native predators known to prey on tortoise eggs, hatchlings, juveniles, and adults include: coyote, kit fox, badger (*Taxidea taxus*), skunks (*Spilogale putorius*), common ravens, golden eagles (*Aquila chrysaetos*), and Gila monsters (*Heloderma suspectum*). Additional natural sources of mortality to eggs, juvenile, and adults may include desiccation, starvation, being crushed (including in burrows), internal parasites, disease, and being turned over onto their backs during fights or courtship (Luckenbach 1982, Turner *et al.* 1987). Free-roaming dogs cause mortality, injury, and harassment of desert tortoises (Evans 2001). Population models indicate that for a stable population to maintain its stability, on average, no more than 25 percent of the juveniles and 2 percent of the adults can die each year (Congdon *et al.* 1993, Service 1994). However, adult mortality at one site in the West Mojave was 90 percent over a 13-year period (Berry 1997). Morafka *et al.* (1997) reported 32 percent mortality over five years among free-ranging and semi-captive hatchling and juvenile tortoises (up to five years old) in the West Mojave. When the 26 that were known to have been preyed on by ravens were removed from the analysis, mortality dropped to 24 percent. Turner *et al.* (1987) reported an average annual mortality rate of 19 to 22 percent among juveniles over a nine-year period in the East Mojave.

The status and trends of desert tortoise populations are difficult to determine based only upon assessment of tortoise density due largely to their overall low abundance, subterranean sheltering behavior, and cryptic nature of the species. Thus, monitoring and recovery should include a comprehensive assessment of the status and trends of threats and habitats as well as population distribution and abundance.

For more information on desert tortoise or expanded discussions on recovery units and recommended DPSs, please refer to the Recovery Plan (Service 1994) and report prepared by the Committee (Tracy *et al.* 2004).

d. Critical Habitat - Rangewide

On February 8, 1994, the Service designated approximately 6.45 million acres of critical habitat for the Mojave population of the desert tortoise in portions of California (4.75 million acres), Nevada (1.22 million acres), Arizona (339 thousand acres), and Utah (129 thousand acres) (59 FR 5820-5846, also see corrections in 59 FR 9032-9036), which became effective on March 10, 1994. Desert tortoise critical habitat was designated by the Service to identify the key biological and physical needs of the desert tortoise and key areas for recovery, and focuses conservation actions on those areas. Desert tortoise critical habitat is composed of specific geographic areas that contain the primary constituent elements of critical habitat, consisting of the biological and physical attributes essential to the species' conservation within those areas, such as space, food, water, nutrition, cover, shelter, reproductive sites, and special habitats. The specific primary constituent elements of desert tortoise critical habitat are: sufficient space to support viable populations within each of the six recovery units, and to provide for movement, dispersal, and gene flow; sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human-caused mortality.

Critical habitat units were based on recommendations for DWMAs outlined in the *Draft Recovery Plan for the Desert Tortoise (Mojave Population)* (Service 1993). These DWMAs are also identified as "desert tortoise ACECs" by BLM. Because the critical habitat boundaries were drawn to optimize reserve design, the critical habitat unit may contain both "suitable" and "unsuitable" habitat. Suitable habitat can be generally defined as areas that provide the primary constituent elements.

III. Environmental Baseline

a. Status of the Species and its Habitat in the Action Area

The North McCullough Wilderness consists of the Mojave Desert scrub vegetative community. This community is primarily composed of low, widely spaced shrubs, including creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Other affiliated community shrubs include ephedra (*Ephedra* spp.); brittlebush (*Encelia virginensis*); burro bush (*Hymenoclea salsola*); sweetbush, or bebbia (*Bebbia juncea*); and desert saltbush (*Atriplex polycarpa*). Characteristic species associated with the Mojave Desert include Mojave yucca (*Yucca schidigera*), teddybear cholla (*Opuntia bigelovii*), and hedgehog cacti (*Echinoceres* spp.). Short-

lived annual and perennial wild flowers appear in late March, April, and May, and when prompted by winter rains. Four vegetation associations are represented within the Sloan Canyon NCA which include: volcanic basalt slope, moderate creosote (greater than 30 percent cover), sparse creosote/bursage mix, and desert wash. For the estimation of desert tortoise habitat in the NCA, 4,000 feet is considered as the upper elevation for desert tortoise occurrence. Thus, approximately 44,710 of the 48,438 acres of the NCA contain potential tortoise habitat.

Because this consultation is programmatic in scope, desert tortoise surveys were not conducted specifically to provide information on the desert tortoise in the Sloan Canyon NCA. The status of the desert tortoise population in the action area is based on existing data including surveys in the Piute Valley and Las Vegas Valley. These data include triangle transects at random locations within suitable tortoise habitat conducted by BLM between the mid-1980s and 1990. These transects consist of walking the perimeter of an equilateral triangle, 0.5-mile on each side, while recording observations of desert tortoise sign in an area approximately 30 feet wide, providing approximately 6 acres of 100-percent coverage. Triangles were aligned such that each transect represented homogenous habitat to the extent possible. Potential desert tortoise habitat targeted in the surveys includes all acres associated with the creosote-bursage, Mojave mixed scrub, grassland, and blackbrush vegetation communities. Average total adjusted sign (TAS) is determined and relative desert tortoise density is calculated based on the formula developed by Berry and Nicholson (1984). TAS, where total sign is corrected to account for multiple sign that could be attributed to a single tortoise, was then correlated using a regression model to estimate abundance of tortoises per square mile and categorized by relative density.

There are 41,484 acres of tortoise habitat within the BLM/Las Vegas disposal boundary which were identified during desert tortoise surveys conducted from September 2003 through April 2004 (BLM 2004). These tortoise surveys indicate very low to low population densities near the western and northern boundaries of the NCA. Desert tortoise data from Hidden Valley and Eldorado/Piute Valley to the west and south of the NCA indicate low to moderate tortoise population densities. The better tortoise habitat in the NCA includes rolling uplands near washes and adjacent bajadas at the lower elevations on the northern border of the NCA. There is little doubt that the higher elevations of the NCA support very low tortoise population densities, at best.

Nevada Power's Magnolia Substation was constructed northwest of the NCA in 2005. Surveys and monitoring activities in support of this project yielded 20 live tortoises. Surveys for Nevada Power's project and other projects over the years indicate a low to moderate population density in better tortoise habitat.

BLM estimates that the overall relative tortoise density for the Sloan Canyon NCA is low (10-45 tortoises per square mile) based on the data identified above. BLM triangle transect data indicate that the relative desert tortoise population density is low in the areas adjacent to what was to become the Sloan Canyon NCA.

Overview of the Northeastern Mojave Recovery Unit: The action area occurs entirely within the Northeastern Mojave Recovery Unit. The Northeastern Mojave Recovery Unit occurs primarily in Nevada, but it also extends into California along the Ivanpah Valley and into extreme southwestern Utah and northwestern Arizona. Within this recovery unit, the Recovery Plan recommended designation of the following ACECs/DWMAs: Piute-Eldorado; Beaver Dam Slope; Gold Butte-Pakoon; Mormon Mesa; Coyote Spring; and Ivanpah. BLM's Las Vegas Field Office designated portions of the Piute-Eldorado, Mormon Mesa, and Gold Butte-Pakoon ACECs, and all of the Coyote Spring ACEC. BLM's Ely Field Office designated portions of the Mormon Mesa and Beaver Dam Slope ACECs, and all of the Kane Springs ACEC in the Caliente MFP Amendment (BLM 2000b). BLM's Dixie and Arizona Strip Field Offices designated the remaining portions of the Beaver Dam Slope ACEC and all of the Virgin Slope ACEC in their RMPs. In total, approximately 1.8 million acres of tortoise habitat has been designated as desert tortoise ACEC/DWMA in the Northeastern Mojave Recovery Unit.

Vegetation within this recovery unit is characterized by creosote bush scrub, big galleta-scrub steppe, desert needlegrass scrub-steppe, and blackbrush scrub (in higher elevations). Topography is varied, with flats, valleys, alluvial fans, washes, and rocky slopes. Much of the northern portion of the Northeastern Mojave Recovery Unit is characterized as basin and range, with elevations from 2,500 to 12,000 feet. Desert tortoises typically eat summer and winter annuals, cacti, and perennial grasses. Desert tortoises in this recovery unit, which represent the northernmost distribution of the species, are typically found in low densities (approximately 10 to 20 adults per square mile).

b. Factors affecting the species environment in the action area.

Visitor use of the action area was low prior to the Sloan Canyon NCA and North McCullough Wilderness designations; however, recreation is increasing along the urban interface. Generally, the NCA has few roads, routes, trails, or facilities to support recreation. Approximately 100 miles of disturbance from roads, OHV trails, and foot paths have been identified in the NCA. There are no special recreation permits issued or under review within the NCA. Hiking and OHV use are the major recreational activities in the area. Prior to NCA designation, the Las Vegas RMP (BLM 1998) guided management of recreation activities in the action area. Administrative actions taken under the Las Vegas RMP closed approximately the northern half of the NCA to shooting, camping, and OHV use.

BLM identified 44 valid existing rights-of-way on file when the NCA was designated. There are also several pending applications that were filed before the designation, and they would be processed to completion. The rights-of-way are primarily for power lines, flood control facilities, access roads, and communication sites, and are confined primarily to the northern and eastern portions of the NCA. The Nevada Power Company holds the majority of the rights-of-way, which are for power lines and supporting infrastructure. The City of Henderson is the second-largest holder of rights-of-way which are mainly for flood control (two detention and two debris

basins), and two roads and two trails; the rights-of-way for the existing road is to access a flood-control facility, and two new trail rights-of-way for the location of the North McCullough Road and Trail were granted as part of the Sloan Canyon NCA Act.

Telecommunication companies and Federal, State, local, and private agencies hold the remaining rights-of-way. Three communication sites are located within the NCA: Black Mountain Upper, Black Mountain 2, and Black Mountain 3. Each communication site contains multiple rights-of-way and/or leases for individual communication facilities.

BLM monitored visitor use at several sites in the Sloan Canyon NCA from November 2003 to July 2004. During this observation period, approximately 4,000 visitors were counted within the NCA which averages 15 visitors per day or extrapolated to 5,500 visitors per year. BLM estimates that actual visitation is five times higher than the number observed. Thus, current visitation is estimated to be 28,000 visitors per year.

The majority of the OHV use within the action area occurs in the northeastern section of the NCA. A network of routes and trails in the basin in the far northeastern section has been used heavily by motorcycles, OHVs, and four-wheel drive vehicles. Large portions of this area have been damaged from braided routes, steep grades, and pioneering of new routes. BLM does not maintain any routes in the area; however, Nevada Power provides limited maintenance for two power line roads. Boarman (2002b) established that OHV use reduces tortoise densities; however, no studies were found that test how much habitat loss to OHV use can be sustained by the species, or whether limited use is less destructive than open use to desert tortoise habitat, which makes it difficult to extrapolate results to a population level. Relatively easy access into this area has resulted in widespread recreational shooting and trash dumping. BLM has conducted numerous clean-up projects in the area (Gerald Hickman, wildlife biologist, BLM, pers. comm.). In contrast, BLM estimates recreation use in the southeastern section of the NCA to be low due to rugged terrain and very limited access.

The North McCullough Wilderness encompasses the Sloan Canyon Petroglyph Site which is the major point of interest in the area. Other areas in the Wilderness receive low levels of visitor use because of its rugged terrain and prohibition of vehicles. Public use of the Wilderness consists mostly of hiking, equestrian use, wildlife viewing (*e.g.,* bighorn sheep), hunting, and dispersed camping. Most disturbances in the Wilderness consist of two-track routes, abandoned mining sites, and wildlife water developments.

The impacts to desert tortoise within the Northeastern Mojave Recovery Unit identified in the Recovery Plan include: Livestock grazing; mining; urban and agricultural development; OHV activity; military activities; roads; disease; rights-of-way and utility corridors; poaching and predation; vandalism; and wildfires. Of these threats to the recovery unit, development, OHV activity (unauthorized), roads and associated vehicle use, rights-of-way, poaching and predation, vandalism, and wildfire potentially affect desert tortoises in the action area. The major urban

area in the Northeastern Mojave Recovery Unit is the Las Vegas Valley which may result in indirect effects to desert tortoises in the NCA.

During implementation of projects authorized under section 7 that occur in desert tortoise habitat, the Service believes tortoises are taken unknowingly during project activities (*e.g.*, buried by earth-moving equipment) and thus, not reported. Although the actual number of tortoises killed, injured, or harassed cannot be determined with a high degree of accuracy and must be estimated, the number of tortoises authorized to be taken in the incidental take statement of a biological opinion is likely to be substantially greater than those actually taken for most projects. The Service believes that implementation of minimization measures, and terms and conditions of biological opinions, result in a substantial reduction in the number of tortoises actually taken.

Summary of Desert Tortoise Take Exempted in the Action Area: Several previous programmatic biological opinions were issued to BLM prior to designation of the Sloan Canyon NCA and involve action areas that overlap the NCA. Additionally, the Service issued incidental take permits for the desert tortoise in association with habitat conservation plans (HCP) that included minimization and mitigation measures for lands within the NCA.

- *Desert Conservation Plan (DCP).* On July 11, 1995, the Service issued an incidental take permit (PRT-801045) to Clark County, Nevada, including cities within Clark County and Nevada Department of Transportation (NDOT), under the authority of section 10(a)(1)(B) of the Act. The permit became effective August 1, 1995, and exempted the "incidental take" of desert tortoises on non-Federal lands for a period of 30 years on 111,000 acres of non-Federal land in Clark County and approximately 2,900 acres associated with NDOT activities in Clark, Lincoln, Esmeralda, Mineral, and Nye counties, Nevada. The DCP served as the permittee's HCP, which included measures to minimize, avoid, and mitigate the effects of covered activities, on desert tortoises (Regional Environmental Consultants 1995). Take of desert tortoise on private lands adjacent to the boundary of the Sloan Canyon NCA was exempted under the DCP from August 1, 1995, until replaced by the Multiple Species HCP in 2000.

- *Multiple Species HCP.* On November 22, 2000, the Service issued an incidental take permit (TE-034927-0) to Clark County, including cities within the county and the NDOT, for the listed desert tortoise, southwestern willow flycatcher (*Empidonax traillii extimus*), and 76 unlisted, un-proposed species (Regional Environmental Consultants 2000). The Multiple Species HCP and permit superseded the DCP and its associated incidental take permit, and provided coverage for the same areas as the DCP. Many measures and commitments established in the DCP were carried forward and incorporated into the Multiple Species HCP. In the intra-Service biological/conference opinion (File No. 1-5-00-FW-575) for approval of the Multiple Species HCP and issuance of an incidental take permit, the Service determined that covered actions would not jeopardize the continued existence of any of the covered species.

Under the special permit terms and conditions of the permit, take of avian species, with the exception of American peregrine falcon (*Falco peregrinus anatum)* and phainopepla (*Phainopepla nitens*), would not be authorized until conservation actions in desert riparian habitats along the Muddy and Virgin rivers, and Meadow Valley Wash have occurred. The incidental take permit allows incidental take of covered species for a period of 30 years on 145,000 acres of non-Federal land in Clark County, and within NDOT rights-of-way, south of the 38th parallel in Nevada. The Multiple Species HCP serves as the permitees' HCP, and details their proposed measures to minimize, monitor, and mitigate the effects of covered activities on the 78 species, which includes the desert tortoise. In addition to measures specified in the Multiple Species HCP and its implementing agreement, the permittees shall comply with the special terms and conditions of the permit and measures stated in sections 3C and 3D of the 1995 DCP, which were incorporated by reference into the Multiple Species HCP and incidental take permit.

The permittees will impose, and NDOT will pay, a fee of $550 per acre of habitat disturbance to fund these measures. The permittees propose to expend $4.1 million per biennium, as adjusted to reflect cost of living increases, to minimize and mitigate the impacts to covered species. It is anticipated that the majority of these funds will be used to implement minimization measures, such as increased law enforcement; construction of highway barriers; road designation, signing, closure, and rehabilitation; and tortoise inventory and monitoring. The benefit to the covered species, as provided by the Multiple Species HCP, should substantially minimize and mitigate those effects which will occur through development within the permit area, and aid in recovery of listed species and conservation of unlisted species. Take of desert tortoise on private lands within, and adjacent to, the boundary of the Sloan Canyon NCA may occur under purview of the Multiple Species HCP. Tortoises within the Sloan Canyon NCA may benefit from conservation actions implanted as mitigation under the Multiple Species HCP.

- *File Nos. 1-5-96-F-023R & 1-5-96-F-23R.2, and 1-5-96-F-023R.3, as amended.* On April 11, 1996, the Service issued a programmatic biological opinion (File No. 1-5-96-F-023R) to BLM's Las Vegas District for implementation of their Management Framework Plan and the land exchange portion of their Stateline RMP within the Las Vegas Valley. Implementation of these plans may result in disposal or development of approximately 125,000 acres of land administered by BLM by sale, land exchange, or lease within the 378,978-acre programmatic area. As a result of urban expansion, most BLM lands within the Las Vegas Valley are highly fragmented and impacted by human activities, particularly a 4,000-acre "exclusionary" zone, which consists primarily of severely degraded or impacted desert tortoise habitat. Except for lands within the exclusionary zone, BLM collects a remuneration fee of $705 per acre, as indexed for inflation, to compensate for the loss of tortoise habitat within the programmatic boundary. The fees

are used to fund management actions that are expected to provide direct and indirect benefits to the desert tortoise over time, which will assist in its recovery.

On April 20, 2001, BLM requested a second reinitiation of consultation on the Las Vegas Valley Biological Opinion. The purpose for modifying the 1996 Biological Opinion was to (1) extend the term of the programmatic biological opinion which expired April 11, 2001, to an indefinite period of time, (2) incorporate the previous correction and amendments into this modified opinion, (3) eliminate the numeric cap, by project, on the number of acres that may be disturbed, and (4) delete the discretionary clause addressing possible non-waiver of fees for actions within the urbanized exclusionary zone identified in the 1996 Biological Opinion. On October 31, 2001, the Service issued the 2001 Biological Opinion (File No. 1-5-96-F-023R.2) to BLM which incorporated the proposed modifications.

On September 10, 2004, BLM requested reinitiation of consultation on the 2001 Biological Opinion (File No. 1-5-96-F-023R.2). The purpose of this reinitiation was to address potential effects to the desert tortoise and Las Vegas buckwheat (*Eriogonum corymbosum* Bentham var. *nilesii* Reveal 2004), from the expansion of the land disposal boundary established in the 1996 Biological Opinion for the Las Vegas Valley consistent with the Southern Nevada Public Land Management Act (SNPLMA) of 1998, as amended. The SNPLMA requires the Secretary of Interior to select lands for disposal based on consultations with and nomination by local governments, consistent with community land use plans. While the Service has not proposed the Las Vegas buckwheat for listing as endangered or threatened under the Act, or not yet elevated the taxon to candidate status, BLM and the Service agreed conferencing was appropriate to identify pertinent conservation measures that would reduce the level of effects to the species. On December 20, 2004, the Service issued a biological opinion (File No. 1-5-96-F-023R.3) to address potential effects to the desert tortoise and Las Vegas buckwheat that may result from the modified disposal boundary. The action area for the subject consultation includes areas covered by the 2004 programmatic biological opinion for the Las Vegas Valley.

- *File No. 1-5-97-F-251.* On November 21, 1997, the Service issued a programmatic biological opinion to BLM for implementation of multiple-use actions within their Las Vegas District, excluding desert tortoise critical habitat, proposed desert tortoise ACECs, and the area covered by the Las Vegas Valley programmatic consultation. BLM may authorize activities within the programmatic area that may result in loss of tortoises or their habitat through surface disturbance, land disposal, and fencing, for a period of five years. The total area covered by this programmatic biological opinion is approximately 2,636,600 acres, which includes approximately 263,900 acres of BLM-withdrawn lands in Clark County. This programmatic consultation is limited to activities which may affect up to 240 acres per project, and a cumulative total of 10,000 acres, of desert tortoise

habitat excluding land exchanges and sales. Only land disposals by sale or exchange within the defined disposal areas in Clark County may be covered under this consultation up to a cumulative total of 14,637 acres. A maximum total of 24,637 acres of desert tortoise habitat may be affected by the proposed programmatic activities. BLM collects a remuneration fee of $705 per acre of disturbance of desert tortoise habitat, as indexed annually for inflation. The fees are used to fund management actions which are expected to provide direct and indirect benefits to the desert tortoise over time, which will assist in its recovery. The action area for the subject consultation includes areas covered by this programmatic biological opinion for the Las Vegas District.

- *File No. 1-5-98-F-053, as amended.* On June 18, 1998, the Service issued a programmatic biological opinion to BLM for implementation of the Las Vegas RMP (BLM 1998). The project area for this consultation covers all lands managed by BLM's Las Vegas Field Office, including desert tortoise critical habitat, desert tortoise ACECs, and BLM-withdrawn land. The action area for the subject consultation includes areas covered by this 1998 programmatic biological opinion. The Las Vegas Field Office designated approximately 648 square miles of tortoise habitat as desert tortoise ACEC in the Northeastern Mojave Recovery Unit, and approximately 514 square miles of tortoise habitat as desert tortoise ACEC in the East Mojave Recovery Unit, through the final RMP. As identified in the RMP, BLM manages 743,209 acres of desert tortoise habitat within four tortoise ACECs for desert tortoise recovery. To accomplish desert tortoise recovery in the Northeastern and Eastern Mojave Recovery Units, the Las Vegas Field Office implements appropriate management actions in desert tortoise ACECs through the RMP including:

  1. Manage for zero wild horses and burros within desert tortoise ACECs.
  2. Limit utility corridors to 3,000 feet in width, or less.
  3. Do not authorize new landfills or military maneuvers.
  4. Require reclamation for activities which result in loss or degradation of tortoise habitat, with habitat to be reclaimed so that pre-disturbance condition can be reached within a reasonable time frame.
  5. Limit all motorized and mechanized vehicles to designated roads and trails within ACECs and existing roads, trails, and defined dry washes outside ACECs.
  6. Allow non-speed OHV events within ACECs, subject to restrictions and monitoring determinations.
  7. Prohibit OHV speed events, mountain bike races, horse endurance rides, four-wheel hill climbs, mini-events, publicity rides, high-speed testing, and similar speed based events.
  8. Within ACECs, do not allow commercial collection of flora. Only allow commercial collection of fauna within ACECs upon completion of a scientifically credible study that demonstrates commercial collection of fauna does not

adversely impact affected species or their habitat. This action will not affect hunting or trapping, and casual collection as permitted by the State.

BLM currently collects a remuneration fee of $705 per acre of disturbance of non-critical desert tortoise habitat, as indexed for inflation. If desert tortoise critical habitat is disturbed, the Management Oversight Group's compensation formula is implemented (Hastey *et al.* 1991) and a factor of 3 to 6 is applied to the base rate of $705 per acre, resulting in a fee equivalent to $2,115 to $4,230 per acre of disturbance.

IV. Effects of the Action

Direct effects encompass the immediate, often obvious effect of the proposed action on the tortoise or its habitat. Indirect effects are caused by, or result from the proposed action, are later in time, and are reasonably certain to occur. In contrast to direct effects, indirect effects are more subtle, and may affect tortoise populations and habitat quality over an extended period of time, long after surface-disturbing activities have been completed. Indirect effects are of particular concern for long-lived species such as the tortoise because project-related effects may not become evident in individuals or populations until years later.

Site developments that may occur in the NCA, such as visitor facilities and rights-of-way are more likely to occur in the lower elevation sites associated with creosote-bursage or Mojave mixed scrub vegetation types, and would cause the most significant degree of habitat manipulation or even loss. These developments however, also would receive the greatest degree of BLM control and oversight. Following development, use of these sites would be occurring on areas where significant habitat modification has occurred, reducing the likelihood of tortoise encounter and increasing visibility and therefore ability to detect and avoid tortoises should they wander into the area. BLM estimates for the number of acres anticipated to be disturbed and rehabilitated over the next 10 years are identified in Table 2 below.

Mechanical disturbance of desert soils as a result of construction or development projects may cause: (1) changes in annual and perennial plant production and species composition including introduction of non-native plants and noxious weeds, or an expansion of their distribution; (2) soil loss due to increased rates of water and wind erosion; (3) reduced soil moisture; (4) reduced infiltration rates; (5) changes in soil thermal regime; and (6) loss of native seeds or their inability to germinate; and (7) compaction or an increase in surface strength (Adams *et al.* 1982; Biosystems 1991; Burge 1983; Bury and Luckenbach 1986 and 2002; Davidson and Fox 1974; Hinkley *et al.* 1983; Nakata 1983; Vollmer *et al.* 1976; Webb 1983; Wilshire 1977 and 1979; Wilshire and Nakata 1976; Woodman 1983). When the soil surface is exposed by vehicular activity (*e.g.,* OHVs), the thermal insulation provided by the vegetative cover is decreased, which results in increased daytime temperatures. Higher temperatures decrease the

soil moisture, which causes soil temperature to increase further because less heat is required to vaporize the water present. Revegetation is inhibited as a result of these processes (Webb *et al.* 1978).

Table 2. **Projected Disturbance/Reclamation for Sloan Canyon NCA, 2006-2016**

Facility/Area	Acres Reclaimed*	Acres Disturbed*
Visitor Center, including parking facilities		20
Utility ROWs (water, sewer, electric) Assume 20' wide for .5 mile		1.2
Quo Vadis Trailhead		5
Dutchman Pass Trailhead		5
Hidden Valley Trailhead		5
Designated Trails, including Henderson ROW Assume total length of new disturbance = 11 miles; 10 feet wide		13
Potential trails Assume a 30 mile boundary trail; 6 trails @ 4 miles; 15 trails @ 2 miles; each trail, with disturbance, 10 feet wide		102
Potential ROWs to outside applicants Henderson's North McCullough Road		42
Unauthorized Roads and Trails Assume ½ of identified roads and trails reclaimed = 32 miles at 10 feet wide	38	
Area Disturbances on NE portion of NCA	20	
Disturbance in Wilderness	4.5	
Total	**62.5**	**193.2**

* All acreage approximate

1. **Effects of recreation and visitor management activities:** Recreation activities likely to occur within the Sloan Canyon NCA include hiking, mountain biking, equestrian use, rock-climbing, dog exercise, hunting, nature study and sight-seeing, and dispersed camping. Boarman (2002b) determined that there were no known studies concerning the impacts of these activities on desert tortoise populations; however, there are likely impacts which include: illegal handling and disturbance of tortoises by the public; loss of habitat for trails and other recreational infrastructure; introduction and spread of alien plants by visitors and horses; vandalism; road kills by vehicles operated by recreationists traveling within the NCA; desert tortoise harassment, injury, or mortality by dogs if not

controlled; trampling of desert tortoises and their burrow as a result of cross-country equestrian activities; and increases in raven populations attracted by human presence and trash. Further, the potential increase in trash may result in injury or mortality of desert tortoise if ingested or if the tortoise becomes entangled. OHV activity, rock hounding, geo-caching, and recreational target shooting activities are prohibited throughout the NCA.

Potential effects to desert tortoise resulting from installation, use, modifications or improvements, and maintenance of recreational and visitor facilities may include: Mortality, injury or harassment of individuals as a result of vehicle encounters; disruption of behavior during construction or use of facilities; conducting activities during the periods of time when tortoise are most active; habitat disturbance resulting in loss of cover and forage; compaction of soils; habitat fragmentation; increased opportunities for collection or vandalism; introduction of alien plants and exotic animals by users and pack stock; injury or mortality encounters with visitors' pets; and illegal collection of desert tortoises or release of pet tortoises, including exotic species, increasing disease transmission or competition. Increased levels of surface-disturbing activities may increase the abundance of alien plants and wildfire frequency (Brooks *et al.* 2003).

Vehicles and equipment may stray from existing roads or designated areas and kill or injure tortoises, or crush their burrows. Tortoises may take shelter under parked vehicles and be killed, injured, or harassed when the vehicle is moved. Failure to report tortoise injuries and mortalities may result in additional take of tortoises if measures are not implemented to address the cause of such take. If BLM is not notified in advance of the project, proper oversight may not occur. If tortoise-proof fencing is installed, over time breaches may occur, thus allowing tortoises to pass through the barrier and be in harm's way. Temporary fencing left in place following the action or threat to tortoises in the area may contribute towards habitat fragmentation. Materials and equipment left behind following a project or action may be ingested by tortoises, entrap or entangle tortoises, attract desert tortoise predators such as common ravens and coyotes, or provide shelter for tortoises which when removed may result in displacement or injury of the tortoise.

Additional unauthorized impacts that may occur from casual use of the NCA include unauthorized trail creation; illegal shooting; and ground disturbance during search and rescue, abandoned vehicle recovery operations, or other administrative/law enforcement purposes, which may occur off existing roads, trails or other disturbed areas; and illegal OHV activities. Mountain bikes that stray off designated roads and trails, and cross-county equestrian activities will likely cause habitat damage and create new trails that may subsequently be used by recreationists.

2. **Effects of transportation activities:** The North McCullough Road is the only new access road proposed by BLM. Continued use of existing roads would result in effects to

the desert tortoise. Census data indicate that desert tortoise numbers decline as vehicle use increases (Bury *et al.* 1977) and that tortoise sign increases with increased distance from roads (Nicholson 1978). Tortoises often use roads which have depressions as drinking sites. Vehicular activity on unpaved roads following rains may preclude tortoises from drinking water, which may be available for only brief periods. Tortoises that move or occur in the paths of recreational vehicles may be killed or injured (Bury and Luckenbach 2002, Nicholson 1978), or collected as pets or food (Berry *et al.* 1996).

Other potential effects of these activities may include mortality, injury or harassment of individuals as a result of vehicle encounters including disruption of behavior during road construction, grading/paving/graveling, maintenance, and use of trails and roads. BLM's proposed action does not include habitat loss as a result of new road construction other than the North McCullough Road. Use of existing roads may result in habitat fragmentation; increased opportunities for collection or vandalism; introduction of alien plants and exotic animals; injury or mortality as a result of encounters with visitors' pets; and illegal release of pet tortoises including exotic species. Road kills and litter from vehicles and trail users may attract subsidized tortoise predators.

3. **Effects of permitted activities:** Issuance of SRPs and similar permits by BLM would authorize commercial activities, research, competitive activities, vending, organized group activities, and event use. Potential effects of vehicle tours on the desert tortoise are identified in the *Effects of Recreation and Visitor Activities* and *Transportation Activities* sections above. Failure to report permitted research or monitoring results may result in unnecessary future impacts to the species and lessen the recovery potential for the desert tortoise. Activities authorized by vending or competitive SRPs would mostly occur within previously disturbed areas and BLM determined that effects to the desert tortoise as a result of these permitted actions are negligible.

4. **Effects of habitat restoration, weed-control, and wildlife activities:** Actions may involve use of heavy equipment, all-terrain vehicles (ATVs), or hand-tools and include recontouring, ripping of soil, ground watering, broadcast seeding, use of water trucks for dust abatement, and planting of live vegetation. Use of vehicles and heavy equipment may increase the risk of injury or mortality of individuals, short-term displacement/noise during the project, short-term loss of vegetation (though unlikely), and temporary ground disturbance due to fencing or installation of barricades. Many potential effects of habitat restoration are the same as, or similar to, other surface-disturbing activities identified above. Activities associated with weed treatments that may affect the desert tortoise include application of herbicides; clearing or cutting vegetation by hand or with machinery; and use of ATVs on disturbed areas for site access. Effects to the desert tortoise include: unintentional removal/destruction of plants used by tortoises for forage or shelter; soil compaction; alteration of local microclimate through vegetation removal;

and harassment, injury or mortality of tortoises as a result of vehicle or machinery operation.

Beneficial effects include long-term improvement of species diversity (including food sources); long-term reduction in erosion; long-term increased habitat quality; increased tortoise abundance and distribution through habitat enhancement; decreased potential for future alien plant invasions; and decreased wildfire potential.

Activities that may affect desert tortoise through implementation of wildlife management actions include installation of artificial water sources, tanks, aprons and waterlines; helicopter staging and landing; capture and release of bighorn using traps, helicopters, and vehicles; clearing of vegetation and trenching or drilling for fence lines, posts, or other barricades; and drilling, bulldozing, filling excavations, recontouring the surface, and cross-country travel with heavy equipment for filling mine shafts (though typically associated with existing disturbances). Tortoises may become trapped and die in wildlife guzzlers if not properly designed. In 1996, a biologist with the California Department of Fish and Game reported 26 desert tortoise mortalities in 89 upland game guzzlers (Boarman 2002b).

5. **Effects of lands, realty, and mineral development activities:** Land actions include authorization of rights-of-way which may involve surface disturbing actions (effects described previously), trenching, blasting, blading and removal of vegetation, installation of structures, and maintenance of infrastructure. These actions can have the following effects to the species: crushing of tortoise burrows; removal of cover and forage plants; introduction/spread of exotic species; soil compaction; loss of habitat and cover resulting from ground disturbance; and harassment, injury or death of individuals from any of the above actions.

6. **Effects of capturing, handling, and relocating desert tortoises:** Blythe *et al.* (2003) found that Sonoran desert tortoises moved out of harm's way a distance less than 0.5 mile and returned to their home ranges within a few days. Unless movement barriers are in place, tortoises moved a distance of less than 0.5 mile out of harm's way are likely to return to potentially harmful conditions. Tortoises may die or become injured by capture and relocation if done improperly, particularly during extreme temperatures, or if they void their bladders. Averill-Murray (2001) determined that tortoises that voided their bladders during handling had significantly lower overall survival rates (0.81-0.88) than those that did not void (0.96). If multiple desert tortoises are handled by biologists/ monitors without protective measures including unused latex gloves, pathogens may be spread among the tortoises.

Summary of adverse effects associated with human presence in the NCA: Human activities in the Sloan Canyon NCA potentially provide food in the form of trash and litter, or water, which

attract tortoise predators such as the common raven, kit fox, and coyote (Berry 1985; BLM 1990). Natural predation in undisturbed, healthy ecosystems is generally not an issue of concern. However, predation rates may be altered when natural habitats are disturbed or modified. Common raven populations in some areas of the Mojave Desert have increased 1500 percent from 1968 to 1988 in response to expanding human use of the desert (Boarman 2002c). Since ravens were scarce in this area prior to 1940, the current level of raven predation on juvenile desert tortoises is considered to be an unnatural occurrence (BLM 1990). In addition to ravens, dogs have emerged as significant predators of the tortoise particularly near residential development. Dogs may range several miles into the desert and have been found digging up and killing desert tortoises (Service 1994, Evans 2001). Dogs brought to the NCA with visitors may harass, injure, or kill desert tortoises, particularly if allowed off leash to free-roam in occupied desert tortoise habitat.

Anticipated effects of conservation measures: Potential effects of recreation, visitor management, and transportation would be minimized by: imposition of a speed-limit and litter-control program; requiring the use of weed-free hay and removal of waste and temporary water troughs; restricting vehicular traffic to designated areas; moving tortoises out of harm's way (*e.g.*, on a road); reporting information to the Service on any take of desert tortoise; and designating roads/trails for recreation and visitor use, and closing those identified by BLM as unnecessary. Casual and dispersed recreation activities are enforced by BLM rangers and staff through public education, and through directing use to less sensitive areas.

Potential effects that may result from issuance of permits would be minimized by those measures identified above, and implementation of a tortoise awareness program; designation of a BLM representative to oversee permitted activities; checking underneath parked vehicles for tortoises before they are moved; use of previously disturbed areas where possible; removing project-related materials; avoiding desert tortoise burrows and periods of greatest tortoise activity; prohibiting ground disturbance and damage, collection, or introduction of plants or animals; and reporting research data to BLM and the Service. BLM's requirement for permittees to provide data collected under research or monitoring permits may contribute towards recovery of the tortoise by minimizing future impacts in the action area and increasing our knowledge base for the species.

Measures proposed by BLM to minimize potential effects to the desert tortoise that may result from habitat restoration, weed-control, wildlife activities, lands and realty actions, and mineral development include many of the measures identified above. In addition, BLM proposes to limit activities to marked or flagged areas; conduct desert tortoise clearance surveys; and require an onsite biologist. If ground disturbance is required, BLM may also require the proponent to disturb the least amount of habitat to accomplish the action; pay the appropriate remuneration fee; construct, inspect, maintain, and remove tortoise exclusionary fencing; and restore disturbances.

Potential effects of capturing and handling desert tortoises should be minimized by implementing Service-approved handling protocols and measures proposed by BLM which include requiring tortoise handlers and project monitors to be qualified and approved through an appropriate review processes; reporting tortoise mortalities/injuries associated with handling; and imposing temperature restrictions for handling/moving tortoises.

V. Cumulative Effects

Cumulative effects are those effects of future non-Federal (State, local government, or private) activities that are reasonably certain to occur in the project area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The vast majority of the human population in southern Nevada is concentrated in the Las Vegas Valley which includes Henderson and Boulder City, and has increased significantly over the past 20 years. Tourism is the major industry in the area and the proximity of Sloan Canyon NCA to Las Vegas makes the area very popular with tourists and locals. With tourism, there may be an increase of visitors not familiar with the area; their presence could lead to the capture or collection of desert tortoise and the use of vehicles off of existing roads and trails, further impacting the tortoise and its habitat. Increased vehicle traffic in the NCA may result in increased road kills.

Desert tortoise habitat at the interface between developed lands and open desert is most susceptible to negative impacts. There may be an alteration of predation rates beyond what could be considered normal. Public land adjacent to urban areas may be affected by indiscriminate use of firearms and OHV use by children as well as adults. The majority of the lands within the action area are administered by BLM. Therefore, any actions on these lands would be subject to consultation under section 7 of the Act. Other lands are covered under the Multiple Species HCP.

VI. Conclusion

After reviewing the current status of the desert tortoise, the environmental baseline for the project area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that implementation of programmatic activities as proposed in BLM's September 2005 BA is not likely to jeopardize the continued existence of the threatened Mojave population of the desert tortoise.

We have reached this conclusion for the following reasons:

(1) The action area does not include any areas designated for recovery of the desert tortoise;
(2) relatively few desert tortoises are likely to be killed or injured by actions approved by BLM which would be minimized by BLM's proposed conservation measures;
(3) other than ongoing actions such as non-permitted recreation and visitor use, no actions will proceed under this biological opinion until BLM submits required information on each project that *may adversely affect* the desert tortoise and a response has been received from the Service in accordance with the Service's draft guidance for programmatic biological opinions (Attachment A);
(4) desert tortoises in the North McCullough Wilderness will be conserved by land use restrictions in the area; and
(5) the potential loss of up to 193.2 acres of desert tortoise habitat as a result of the proposed action, represents less than 0.01 percent of the total available habitat within Clark County.

B. INCIDENTAL TAKE STATEMENT

Incidental Take for Programmatic Consultations

Each BLM action that may result in incidental take must have an incidental take statement, whether the action is the adoption of a strategy for developing future projects or the implementation of specific activities under the strategy. The take anticipated as a result of a specific action would be a subset of the programmatic incidental take statement. Though the intent in the appended programmatic approach is for the programmatic incidental take statement to contain all necessary reasonable and prudent measures and associated terms and conditions, due to the lack of available information regarding the specifics of individual projects, it may be necessary to develop project-specific reasonable and prudent measures and terms and conditions to ensure the minimization of the impacts of the incidental take associated with the specifics of each individual project. However, if this is the case, the Service would carefully consider whether the individual proposed project is beyond the scope of the programmatic consultation.

Section 9 of the Act, as amended, prohibits take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 CFR § 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3). Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant. Under the terms of sections 7(b)(4) and 7(o)(2) of the Act, taking

that is incidental to, and not intended as part of the agency action, is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The Service hereby incorporates by reference the conservation measures proposed by BLM from the *Description of the Proposed Action* into this incidental take statement as part of these terms and conditions, to be applied to future appended actions, as appropriate. Terms and conditions for actions covered under, or appended to, this opinion: (1) Restate measures proposed by BLM or provided below, (2) modify the measures proposed by BLM or provided below, or (3) specify additional measures considered necessary by the Service. Where action-specific terms and conditions (*i.e.*, terms and conditions developed for each action to be appended and covered under this programmatic opinion in the future) vary from or contradict the minimization measures proposed under the *Description of the Proposed Action* or general terms and conditions below, the action-specific terms and conditions shall apply. The measures described below are general in nature and may or may not apply to future actions proposed for appendage to this programmatic biological opinion. Terms and conditions that are specific to future BLM projects or actions are nondiscretionary and must be implemented by BLM so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply.

BLM has a continuing duty to regulate the activity that is covered by this incidental take statement. If BLM (1) fails to require the project proponent to adhere to the action-specific terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with action-specific terms and conditions, the protective coverage of section 7(o)(2) may lapse.

I. Amount or Extent of Take Anticipated

a. Based on the analysis of impacts provided above, history of effects from similar actions, anticipated scope of all future actions, minimization measures proposed by BLM, the Service anticipates that the following take could occur as a result of the proposed action:

1. An unknown number of desert tortoises may be incidentally taken as a result of land use and resource management activities during the 10-year period of this biological opinion. Based on desert tortoise population densities and scope of proposed activities, the Service estimates that two desert tortoises could be killed or injured during the term of this consultation and up to three desert tortoises per year could be taken by non-lethal means (capture and relocation).

   To ensure that the protective measures are effective and are being properly implemented, BLM shall contact the Service immediately if a desert tortoise is killed or injured as a result of any activity covered under this biological opinion.

Upon locating a dead or injured desert tortoise within the action area, notification must be made to the Service's Southern Nevada Field Office at (702) 515-5230. At that time, the Service and BLM shall review the circumstances surrounding the incident to determine whether additional protective measures are required. If more than two desert tortoises are found dead or injured during any calendar year, activities may proceed; however, BLM shall contact the Service immediately to determine whether formal consultation should be reinitiated. This threshold is intended to determine whether certain activities or circumstances may be affecting desert tortoises more substantially than we anticipated.

2. An unknown number of desert tortoise nests and eggs may be destroyed during BLM-authorized actions covered under this biological opinion. However, the Service anticipates that the number would be no more than one nest with eggs. BLM shall report impacts to any desert tortoise nests or destruction of desert tortoise eggs to the Service as specified above.

3. An unknown number of desert tortoises may be taken in the form of indirect mortality through predation by ravens drawn to trash; however, the Service believes that this number will be low based on BLM's proposal to implement measures to minimize predation.

II. Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or modification of critical habitat.

III. Reasonable and Prudent Measures

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize the incidental take of desert tortoise:

1. BLM shall implement measures to minimize the incidental take of desert tortoises.

2. BLM shall implement measures to minimize adverse effects to desert tortoises found in harm's way that must be handled, captured, and moved.

3. BLM shall implement measures to minimize the incidental take of desert tortoises through impacts to desert tortoise habitat.

4. BLM shall implement measures to minimize the incidental take of desert tortoises resulting from attraction of potential tortoise predators to the actions area.

5. BLM shall implement measures to ensure compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements contained in this biological opinion.

IV. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, BLM must comply with action-specific terms and conditions, which implement the reasonable and prudent measures described above. Terms and conditions will be provided at the project-level consultation and are non-discretionary, and apply towards actions appended to this programmatic biological opinion. Terms and conditions will be based on measures proposed by BLM in this document to minimize the potential impacts to desert tortoise at the programmatic level and may be modified or replaced for specific actions. Additional measures may be required when specific actions are proposed for appendage to this programmatic biological opinion.

1. To implement Reasonable and Prudent Measure Number 1, BLM shall implement project-specific terms and conditions to incidental take of desert tortoise from future actions funded, conducted, or authorized by BLM. These measures will be provided as part of the Service's response to BLM's request to append actions to this biological opinion, based on the proposed conservation measures under the Description of the Proposed Action.

2. To implement Reasonable and Prudent Measure Number 2, BLM shall implement project-specific terms and conditions to minimize injury or death of desert tortoises that must be handled, captured, and moved out of harm's way. Measures (a-e) below are typically required to minimize potential effects to the desert tortoise that may result from handling. However, the Service may modify these measures or impose additional measures for future actions under this Biological Opinion.

    a. Tortoises that are moved offsite and released into undisturbed habitat on public land by an authorized tortoise biologist, must be placed in the shade of a shrub, in a natural unoccupied burrow similar to the hibernaculum in which it was found, or in an artificially constructed burrow in accordance with the tortoise handling protocol.

    b. Desert tortoises encountered experiencing heat stress will be placed in a tub, by an authorized tortoise biologist, with one inch of 76-90°F water for at least 20 minutes or until heat stress symptoms are no longer evident.

    c. Desert tortoises shall be treated in a manner to ensure that they do not overheat, exhibit signs of overheating (*e.g.*, gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures

necessary to their well-being. Desert tortoises shall be kept shaded at all times until it is safe to release them. No desert tortoise shall be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95°F (35°C). Ambient air temperature shall be measured in the shade, protected from wind, at a height of 2 inches (5 centimeters) above the ground surface. No desert tortoise shall be captured if the ambient air temperature is anticipated to exceed 95°F (35°C) before handling and relocation can be completed. If the ambient air temperature exceeds 95°F (35°C) during handling or processing, desert tortoises shall be kept shaded in an environment that does not exceed 95°F (35°C), and the animals shall not be released until ambient air temperature declines to below 95°F (35°C).

d. BLM and Service wildlife staff must approve the biologists to be used by the applicant to implement the terms and conditions of the biological opinion, or permit issued by BLM. Any biologist and/or firm not previously approved must submit a statement of qualifications in the Service-developed format, and be approved by the wildlife staff before authorized to represent BLM in meeting compliance with the terms and conditions of the biological opinion. Other personnel may assist with implementing conservation measures, but must be under direct field supervision by the approved qualified biologist.

e. In accordance with *Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise* (Service 1992), an authorized desert tortoise biologist should possess a bachelor's degree in biology, ecology, wildlife biology, herpetology, or closely related fields as determined by BLM and the Service. The biologist must have demonstrated prior field experience using accepted resource agency techniques to survey for desert tortoises and tortoise sign, which should include a minimum of 60 days field experience. All tortoise biologists shall comply with the Service-approved handling protocol (Desert Tortoise Council 1994, revised 1999). In addition, the biologist shall have the ability to recognize and accurately record survey results and must be familiar with the terms and conditions of the biological opinion that resulted from project level consultation between BLM and the Service.

3. To implement Reasonable and Prudent Measure Number 3, BLM shall implement terms and conditions to minimize the incidental take of desert tortoises through impacts to desert tortoise habitat. These measures will be provided as part of the Service's response to BLM's request to append actions to this biological opinion, based on the proposed conservation measures under the Description of the Proposed Action.

4. To implement Reasonable and Prudent Measure Number 4, BLM shall implement project-specific terms and conditions to minimize the incidental take of desert tortoises

resulting from attraction of potential tortoise predators to action areas. These measures will be provided as part of the Service's response to BLM's request to append future actions to this biological opinion, based on the proposed conservation measures under the Description of the Proposed Action. The measure below typically is provided to minimize effects to desert tortoises from potential desert tortoise predators.

A litter-control program will be implemented and enforced by the project proponent or BLM. Trash containers shall remain covered, must be raven-proof, and emptied frequently enough to prevent overflow of materials. Trash, litter, project debris, etc. shall be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.

5. To implement Reasonable and Prudent Measure Number 5, BLM shall ensure compliance with this programmatic biological opinion, through implementation of terms and conditions at the action-level, and reporting and reinitiation requirements contained in this biological opinion. These measures will be provided as part of the Service's response to BLM's request to append future actions to this biological opinion.

V. Conclusion

The Service believes that no more than two (2) desert tortoises may be incidentally taken over the 10-year period of this consultation and three (3) desert tortoises taken by non-lethal means, per year. In addition, an unknown number of tortoises may be incidentally taken as a direct or indirect result of increased abundance of tortoise predators. One desert tortoise nest/egg may be incidentally taken as a direct or indirect result of activities covered under this biological opinion over the 10-year term. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed actions. If, during the course of the actions, this level of incidental take is reached and anticipated to be exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. BLM must immediately provide an explanation of the causes of the taking, and review with the Service the need for possible modifications of the reasonable and prudent measures.

In addition to the anticipated incidental take, a cumulative total of 193.2 acres of desert tortoise habitat may be disturbed as a result of actions under purview of this biological opinion.

Reporting Requirements

Upon locating a dead or injured endangered or threatened species, initial notification must be made to the Service's Southern Nevada Field Office at (702) 515-5230. Care should be taken in handling sick or injured desert tortoises to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of

cause of death. In conjunction with the care of sick or injured desert tortoises or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by the Service to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

Injured desert tortoises shall be delivered to any qualified veterinarian for appropriate treatment or disposal. Dead desert tortoises suitable for preparation as museum specimens shall be frozen immediately and provided to an institution holding appropriate Federal and State permits per their instructions. Should no institutions want the desert tortoise specimens, or if it is determined that they are too damaged (crushed, spoiled, etc.) for preparation as a museum specimen, then they may be buried away from the project area or cremated, upon authorization by the Service. BLM shall bear the cost of any required treatment of injured desert tortoises, euthanasia of sick desert tortoises, or cremation of dead desert tortoises. Should sick or injured desert tortoises be treated by a veterinarian and survive, they may be transferred as directed by the Service.

C. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service hereby makes the following conservation recommendations:

1. Conduct desert tortoise surveys in the Sloan Canyon NCA to locate and map relative abundance of desert tortoise. Those areas of tortoise populations that are moderate or greater density should be managed as avoidance areas.

2. BLM should manage currently undeveloped lands adjacent to the Sloan Canyon NCA to maintain connectivity of desert tortoise habitat within the NCA with adjacent habitat. These lands should continue to function as a relatively large block of unfragmented, desert tortoise habitat.

3. Specific kiosks in the Sloan Canyon NCA should be designed to include public information about the conservation of the desert tortoise and other Mojave Desert wildlife particularly those subject to collection or vandalism.

4. Within Sloan Canyon, inventory user-defined trails and prioritize these trails for closure and restoration to protect sensitive species.

5. Coordinate with scientists from the U.S. Geological Survey-Biological Resources Division to develop and implement alien plant control procedures within Sloan Canyon

NCA, which may include application of pre-emergent herbicides, and ways to minimize the threat to desert tortoise and their habitat from wildfires.

In order for the Service to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

D. REINITIATION REQUIREMENT

This concludes formal consultation on the actions outlined in your September 20, 2005, request. As required by 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over an action has been retained (or is authorized by law) and if: (1) The amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

We appreciate the assistance and cooperation of your staff throughout this consultation process. If we can be of any further assistance, please contact Michael Burroughs in our Southern Nevada Field office in Las Vegas, at (702) 515-5230.

Cynthia T. Martinez

for Robert D. Williams

Attachments

cc: (w/o attach)
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Supervisory Biologist- Habitat, Nevada Department of Wildlife, Las Vegas, Nevada
Deputy State Director, Resources, Land Use and Planning, Bureau of Land Management, Reno, Nevada
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Assistant Regional Director, Ecological Services, Fish and Wildlife Service, Portland, Oregon (electronic copy)
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Attachment A

PROGRAMMATIC CONSULTATION GUIDANCE
(7/16/03)

INTRODUCTION

Under section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act), each Federal agency must, in consultation with the Services, ensure that any action it funds, authorizes, or carries out will not jeopardize the continued existence of listed species or adversely modify designated critical habitat. In recent years the Services' section 7 consultation workload has increased dramatically resulting in the need to develop techniques to increase the effectiveness of the consultation process. One of the most effective methods of accomplishing this has been the implementation of "programmatic consultation" in both the formal and informal consultation processes. As the use of programmatic consultation techniques has increased there has been a growing need for guidance to ensure consistency with the various requirements of the Act and its implementing regulations. This guidance document is provided to assist in ensuring this consistency.

Programmatic consultation has become a generic term encompassing several different types of Endangered Species Act section 7 consultations. One type evaluates the potential for Federal "programs" to affect listed and proposed species and designated and proposed critical habitat, hereafter referred to collectively as "listed resources." These programs may establish standards, guidelines, or design criteria to which future actions must adhere, for example, Forest Service Land and Resource Management Plans and Bureau of land management resource management plans. Another type of programmatic consultation that has been effectively used addresses a large group of similar actions (e.g., a national forest's timber harvest program for a particular year) or different types of actions proposed within a large geographic area. These types of programmatic consultations address the effects of an identified group of defined actions rather than the standards or design criteria that will be used to develop future actions.

Programmatic consultation techniques have the greatest potential to increase the efficiency of the section 7 consultation process because much of the effects analysis is completed one time up front rather than repeatedly each time a new action, or batch of actions, is proposed. By completing this analysis up front in a programmatic consultation document, the anticipated effects of the action agency's future projects can be added into the environmental baseline prior to their actual completion. This provides predictability for action agencies as they can be assured that the effects of their future actions have already been broadly accounted for. Thus, all other future section 7 consultations (i.e., those not covered by the programmatic consultation document) will be evaluated within the context of these effects having already been added to the

environmental baseline. By completing this analysis up front, the process for completing consultation for future actions proposed under the programmatic consultation can be dramatically shortened.

Some of the benefits of programmatic consultations include: 1) better and more cost effective integration of ecosystem/recovery planning activities with agency activities; 2) streamlined consultation processes; 3) added predictability for all parties; 4) minimization of the potential "piecemeal" effects that can occur when evaluating individual projects out of the context of the complete agency program; and 5) the opportunity to better and more efficiently integrate the action agency's 7(a)(1) responsibilities at the program level.

IMPLEMENTING AUTHORITY

There are several points about programmatic consultation processes that need to be established to ensure a common understanding and consistent and appropriate implementation:

1. A variety of court decisions have made it clear that Federal agencies must consult on the implementation of programs, plans, or strategies that guide the development and implementation of future site-specific action (see Pacific Rivers Council v. Thomas, 30 F.3d 1050, 1052 - 1053 (9th Cir. 1994); Lane County Audubon Society v. Jamison, 958 F.2d 290, 293 (9th Cir. 1992); Silver v. Babbitt, 924 F.Supp. 976 (D. Ariz. 1995); Silver v. Thomas, 924 F.Supp. 976 (D. Ariz. 1995).

2. In cases where a Federal agency adopts or approves a management plan or strategy that will be used to guide the development and implementation of future projects, there are typically at least two "tiers" of Federal agency action; the first tier action of adopting the management plan or strategy and second tier actions involving implementing site-specific projects, such as issuance of an oil and gas lease, under the management plan or strategy. The courts have ruled that the decision to adopt plans (or strategies) that guide the implementation of future individual actions, as well as each future individual action itself, must complete the requirements of section 7 consultation (see Lane County Audubon v. Jamison, at 293; Pacific Coast Federation of Fishermen's Association v. National Marine Fisheries Service; Pacific Coast Federation of Fishermen's Association v. National Marine Fisheries Service, 71 F.Supp. 2d 1063 (W.D. Wa. 1999); Pacific Coast Federation of Fishermen's Association v. National Marine Fisheries Service, No. 99-36027 (9th Cir. 2001)).[1]

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[1]Note that to the best of our knowledge the courts have not directly addressed this issue in a single case, rather, a series of cases must be reviewed to piece together the courts views. For example, while Lane County Audubon v. Jamison addressed the need for consultation at the plan

3. Each action that may directly or indirectly affect listed species or designated critical habitat (in this case, either adoption of the plan or implementation of any specific project under that plan) must have the appropriate Endangered Species Act effects analysis and associated documentation. In other words, any action that is determined "may affect, but is not likely to adversely affect" a listed species or designated critical habitat must have a written concurrence from the Service, while any action that is determined to be "likely to adversely affect" listed resources must have a **complete** biological opinion (including an incidental take statement, where appropriate[2]) (Conner v. Burford, 848 F.2d 1441 (9th Cir. 1988), Conner v. Burford, 605 F.Supp. 107 (D.Mont.1985), Silver v. Babbitt, Silver v. Thomas,).

4. When developing an effects analysis and associated incidental take statement that includes future actions for which insufficient information is available to make accurate determinations (e.g., when consulting at the plan level and the specific future activities and locations are not yet identified), in the effects analysis the Service must provide the benefit of the doubt to the species and develop reasonable projections of potential conflicts between activities that can occur under the agency's program and the protection of listed species. From this, the Service must estimate the potential effects and derive the anticipated level of incidental take that is likely to occur. Note that these estimated levels of effects should correspond to the maximum level of impacts that may be caused by the action (see Conner v. Burford, 848 F.2d 1441, Silver v. Babbitt, Silver v. Thomas).

5. The Service must ensure that the environmental baseline is appropriately tracked during implementation of programmatic consultations. This is described in greater detail below.

PROGRAMMATIC CONSULTATION APPROACHES

There are three commonly used programmatic consultation approaches: Batched, Appended, and Tiered. All three approaches fulfill the standards identified in the "Implementing Authority"

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level, the Pacific Coast Federation of Fishermen's Association v. National Marine Fisheries Service cases addressed the need for review of future actions implemented under an action agency's plan.

[2]This concept is further discussed in the "PROGRAMMATIC FORMAL CONSULTATIONS" and "PROCEDURES FOR COMPLETING PROJECT-LEVEL CONSULTATION" sections below.

section above, however, the manner in which they fulfill these requirements differs. Following are brief descriptions of each approach.

1. Batched Programmatic Consultation Approach: The "batched" approach is widely used throughout the different regions of the country. Under this consultation approach, the action agency groups, or batches, a series of proposed projects into one proposed action and the Services produce a single biological opinion. If all the proposed projects are not likely to adversely affect listed species or designated critical habitat, the Services produce a single concurrence letter to fulfill the action agency's consultation requirements. In effect, several individual consultations are combined into one document. The design of each project is sufficiently developed to accurately assess its potential effects and anticipated take, if any. Thus, the effects of each project are evaluated both individually and cumulatively within one document. This approach is only appropriate when the action agency has sufficiently developed the details of its future actions to allow for the accurate evaluation of their impacts.

2. Appended Programmatic Consultation Approach: This is a two-stage consultation process. The first stage involves the initial development of a programmatic biological opinion, or concurrence if no adverse effects are anticipated, that analyzes the potential landscape-level effects that may result from implementing the design criteria of the action agencies' program. The second stage involves the development of appropriate project-specific documentation that addresses the specific effects of individual projects proposed under the action agency's program. Upon completion of the project-specific review, the associated documentation is appended to the programmatic biological opinion, or concurrence document. This programmatic document, together with the appended project-specific documentation, encompasses the complete consultation document for each individual project.

3. Tiered Programmatic Consultation Approach: Like the Appended approach, the Tiered approach is a two-stage consultation process with the two stages fulfilling the same purposes. The first stage biological opinion or concurrence, as appropriate, evaluates the landscape-level effects of applying the action agency's design criteria to develop future actions. The second stage results in the completion of project-specific documentation that addresses the specific effects of each individual project developed through application of the design criteria. The difference between approaches is the manner in which they achieve these purposes. Under the Tiered approach, two complete consultation documents, biological opinions or concurrence documents, are completed for each stage, with the second-stage documents "tiering" to the first-stage document by incorporating portions of it by reference. Thus each action has its own individual consultation document that is supported by the programmatic document.

TYPES OF "PROGRAMS"

There are a variety of "program" types, each with varying characteristics that present differing challenges for section 7 consultation. The types of programs that are easiest to deal with in section 7 consultation are those that have a series of defined actions that are grouped together, for example, a National Forest's annual timber harvest program or "increment." These often involve a series of defined timber harvest actions that have been grouped into that year's proposed activities for the Forest. Because these proposed actions are fully developed, it is possible to relatively accurately anticipate their potential effects. Consultations for these programs can typically be completed through a "batched programmatic" consultation approach. Because the specifics of each individual action contained within the program are known, a single consultation may be completed at the program-level without the need for additional review.

More challenging programs to complete consultation on are those that do not have defined actions, but only contain the design standards that will be used to develop future actions. These programs typically contain substantial temporal and spatial uncertainty regarding future actions, resulting in corresponding uncertainty regarding potential effects. This uncertainty results in the need to complete two levels of consultation, program- and project-level. Consultations on these types of programs are typically completed using the tiered or appended programmatic consultation methods.

Perhaps the most challenging programs to complete consultation on are those that have not defined their future projects nor formalized design standards to be applied to the development of future actions, but rather contain "goals" for the action agency to achieve. In reality these goals become the design standards, but they are applied to the landscape rather than to individual future projects. For example, an action agency's program may require that as they implement their activities they maintain 500 total acres of listed species habitat. Thus, they have landscape-level design standards as opposed to project-level design standards. These types of programs typically have large amounts of uncertain associated with their future effects. Consequently, consultation on these types of programs often require the Service to work jointly with the action agency to development assumptions that can be used to narrow the effects analysis. More will be discussed on this issue in the "UNCERTAINTY" section below.

CONSULTATION, COORDINATION, COOPERATION, AND INFORMATION REQUIREMENTS

The consultation, coordination, and cooperation procedures identified in this section are appropriate for each of the programmatic consultation types, but they are particularly important for the Appended and Tiered approaches. This is because these two approaches involve the completion of program-level consultation documents prior to the development of specific projects; thus the consultation will be completed on implementation of the standards the action agency will apply when developing its future actions.

In accordance with 50 CFR 402.14(c), to initiate formal section 7 consultation action agencies provide the Services with:

1. A description of the action to be considered;

2. A description of the specific area that may be affected by the action;

3. A description of any listed species or critical habitat that may be affected by the action;

4. A description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effects;

5. Relevant reports, including any environmental impact statement, environmental assessment, or biological assessment prepared; and

6. Any other relevant available information on the action, the affected listed species, or critical habitat.

When initiating informal consultation an action agency uses this same information to determine whether its proposed action is likely to adversely affect listed species; this information is then provided to the Services for evaluation.

The Services and action agencies have found that by engaging in early planning and coordination while compiling the above information, the Services' Endangered Species specialists and the action agencies' technical experts can identify and address issues and make appropriate adjustments while there is the maximum flexibility to modify project designs. Such early coordination allows managers to make appropriate adjustments to proposed activities during the project design phase to incorporate species' habitat needs, thus facilitating and expediting the section 7 consultation process.

During section 7 consultation the Services must:

1. Review all relevant information that is provided by the action agency or is otherwise available;

2. Evaluate the current status of the listed and proposed resources to be affected (this includes an evaluation of the threats facing these listed and proposed resources), and the environmental baseline within the action area;

3. Evaluate the effects of the proposed action and cumulative effects on the listed and proposed resources;

4. Use the above information to determine the effects of the proposed action on the conservation status of the listed species (i.e., evaluate the potential for the proposed action to result in jeopardy or adverse modification). (From 50 CFR 402.14(g)).

In addition, the regulations direct the Services to discuss this analysis with the action agency. The early coordination process has been particularly effective when the action agencies and Services have jointly completed the requirements of consultation identified above and developed project design criteria or standards. Such design criteria are often identified so that projects can be readily classified into one of three consultation effects categories – "no effect," "not likely to adversely affect," or "likely to adversely affect." This approach provides predictability to action agencies as they can anticipate the procedures that will be used to complete section 7 consultation for projects that meet the specified standards. Once a project has been developed to meet the design criteria, the consultation typically can be completed relatively quickly. The development of design criteria is discussed in further detail below. Developing projects in a manner that ultimately reduces adverse effects to listed and proposed resources can often most effectively streamline the consultation process.

Implementation of this process within the action agencies' programs: (1) lays the foundation for the landscape-level perspective needed to implement programmatic consultation procedures that can greatly accelerate the consultation process; (2) provides the structure for identifying, evaluating, and balancing the short-term risks and long-term benefits of future activities; and (3) facilitates the development of section 7 consultation "triggers" (i.e., triggers for informal or formal consultation).

Developing Design Criteria

At times, though not in all circumstances, it will be appropriate to develop design criteria or standards to guide the development of future projects. The following process for developing design criteria has been adapted from procedures that have been found to be particularly effective in streamlining section 7 consultation. To begin the design criteria development process, the Services and action agencies should commit personnel with appropriate biological expertise and with expertise related to carrying our the action agency's program activities. It is important that these personnel function as a unified team with common goals and objectives. For this reason it may be appropriate that each agency's representatives spend some time becoming familiar with the other agencies' needs and limitations.

Design criteria can be developed through a five-step process. These steps are designed to integrate species' needs with the needs of the action agencies and to provide a means to jointly fulfill the requirements of section 7 consultation identified in the "Pre-consultation, Coordination, and Cooperation" section above. All available relevant information should be used to complete each step. This information should be updated as necessary.

1. Identify the conservation needs of each listed species. Using information from listing rules, recovery plans, past consultation documents, recovery outlines, etc., identify the conservation needs of the species within the context of their feeding, breeding, sheltering, and dispersal. While these conservation needs may be pertinent to the species throughout its range, particular attention should be paid to their needs within the action area;

2. Identify the threats to each listed species' conservation, both range-wide and within the action area, along with the level of concern associated with each threat. The threats that the action agencies can influence should be specifically identified. When possible, these threats should be categorized by the five listing factors identified in section 4 of the Act in order to best facilitate the development of future effects analyses;

3. Identify species conservation or management units (e.g., watersheds, action agency management districts, resource areas, field offices, etc.), and the threats affecting each unit. These units may be based on various factors such as the ecological roles that each will be expected to fulfill in providing for the conservation of the species, the different types of actions that will be implemented within the area, differences in ecological conditions, etc. The intent is to maintain flexibility in the scale of these units to allow them to vary with the needs of each individual situation. This step should use information developed in the previous steps;

4. Identify species' conservation goals framed within the context of the action agencies' programs and authorities. These conservation goals should be derived from the information developed in the previous two steps, should consider the ecology associated with the predominant habitat types, and should utilize information regarding the specific types of future activities the action agencies will be proposing. In this step the biological justification for each goal and potential methods for achieving it should be presented. The goals typically should be broad in nature, allowing for flexibility in project designs to meet the needs of individual situations. In other words, they should identify "what" to achieve rather than "how" to achieve it;

5. Develop conservation/management unit strategies for implementing future activities. This will typically involve the development of design criteria for future projects. These "sideboards" will be based on the information developed in the previous steps and will provide guidance to agency personnel for use in developing future actions. The sideboards should provide for efficient progress towards beneficial long-term objectives while ensuring that short-term effects do not rise to the level of jeopardy or adverse modification. If the sideboards are designed correctly, and if future projects are developed within them, the action

agencies will have high assurance of the results of future section 7 consultations. This predictability can be invaluable to planning and preparation processes.

Completion of these steps fulfills two main streamlining objectives. First, it completes a substantial portion of the effects analysis at one time and early in the consultation process. In the standard consultation process, these steps are typically not completed until the latter part of consultation and are repeated for each individual proposed action. Completing this process early and one time is an effective technique for streamlining future consultations. Second, it will result in design criteria that reduce potential adverse effects to listed resources within the constraints of the action agency's needs and provides a predictable consultation process. Developing conservation strategies early in the design process when there is relative flexibility has the potential to minimize the costs and disruptions to project planning processes.

UNCERTAINTY

When completing consultation on an action agency's program standards or design criteria there is often uncertainty regarding potential effects due to the action agency's uncertainty regarding specific future projects. For example, while an action agency may commit to using certain design criteria whenever a project will occur within a specified distance of listed species habitat, until the projects are fully developed, it may not know how many will fall within this distance. Thus, the total effects that will result from program implementation may not be known. Or, while the action agency may commit to surveying each future project-site prior to implementing activities, until they complete the surveys they may not know how many individuals will actually be impacted.

As stated previously, when such uncertainty exists, the Services must provide the benefit of the doubt to the species and use "reasonable worst case" assumptions. This results in the Services examining the greatest levels of impacts that can occur from projects that meet the program standards. This evaluation is then refined through the project-level consultation. This approach is followed to ensure that the action agency can fulfill its responsibilities under section 7(a)(2) of the Act to "insure" that actions implemented under their "program" are not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat. Failure to employ this approach and instead limiting the effects analysis to address only some of the effects that can result from the program under consultation would have the effect of the Services inappropriately narrowing the action agency's proposed action.

However, at times uncertainty regarding the potential effects of future actions developed through implementation of the action agency's program may be so great that it is not possible to accurately project the potential effects that may result. To address these situations the Services should work with the action agency to jointly develop "assumptions" that will be used to constrain the effects analysis. Both the action agency and the Services must believe that these assumptions will be met as the proposed program is implemented; failure of one of the

assumption may result in effects that were not analyzed in the biological opinion and the need to reinitiate consultation. For this reason it is important that the agreed upon assumptions be appropriately narrow so as to address only the issues of concern. For example, for a program that will impact a species that is dependent on late-successional habitat there may be concern regarding the potential level of future impacts because the program as proposed contains no measures that would limit impacts to late-successional habitat types. As a result the Services would have to analyze the effects of the action agency impacting all of the late-successional habitat within the action area. Alternatively, the action agency and Services could jointly develop appropriate assumptions that can be used to narrow the effects analysis. During the ensuing discussions it is determined that concern only exists in a few areas within the action area and that the action agency does not foresee substantial impacts to these areas. Therefore, the action agency and Services jointly agree upon limits on the impacts to late-successional habitat. However, rather than applying these limits to all late-successional habitat, these limits are narrowly applied only to the areas of concern for the listed species. This results in a jointly developed assumption that no more than the agreed upon number of acres of late-successional habitat will be impacted in the areas of concern for the listed species.

Through the development of such assumptions, the action agency is essentially agreeing to conditions that must be adhered to in order to ensure that the consultation document and any accompanying incidental take statement remain valid. For this reason the assumptions must be clearly documented and monitored as appropriate. To accomplish this, the Services will identify each jointly developed assumption within both the "Description of the Proposed Action" and "Effects of the Action" sections of the biological opinion. Each assumption should be identified in the appropriate location; for example, if the assumption that not more than 50 acres of wetland fill will occur within a county in any one year is developed, then in the portion of the "Description of the Proposed Action" section that talks about wetland fill, the Services will cite the previous discussions with the action agency and the resulting jointly developed assumption.

Once the appropriate assumptions are jointly developed, procedures for ensuring that they are met should be jointly developed and implemented by the action agency. In many cases these procedures may be as simple as reporting at agreed upon time intervals that each assumption continues to be met. The procedures for monitoring the validity of the assumptions may be incorporated into the project design by the action agency, or, in the case of the assumptions affecting the potential impacts of take, the procedures may be presented within the incidental take statement. Regardless, like the assumptions themselves, the procedures for monitoring them should be jointly developed and agreed upon. If the monitoring needed to assure the validity of an assumption cannot be agreed upon, then it may not be appropriate to use such assumption. This will depend in part on the sensitivity of the effects analysis to the validity of the assumption. For example, if after further analysis it is determined that failure of an assumption would not change the results of the effects analysis, then the Services should document this analysis to provide justification for not validating the assumption and monitoring would not generally be necessary.

This might particularly be the case when the Services and action agency have agreed to assume species presence in the absence of surveys. For example, if impacts to the species' habitat are of concern to the species' conservation rather than take of the individuals associated with this habitat, when the project-level review is conducted, the agencies may agree that based on the available information and providing the benefit of the doubt to the species, species presence is a valid assumption. The Services would have to clearly and concisely establish the justification for this assumption in the biological opinion (e.g., the presence of suitable habitat, the proximity of the action area to known species' locations, the history of the species occurring in similar habitats under similar circumstances, etc.). Then the Services would explain the relative value to the conservation of the species of the habitat within the action area as opposed to the individuals utilizing that habitat. The Services would further explain that due to these relative values the effects analysis and resulting determinations would be relatively unchanged if the assumption holds true or not. Finally, the Services would use this analysis to justify not validating the assumption of species presence through surveys.

The biological opinion should identify the procedures to be followed if at any time it is found that an assumption has not been met. These procedures may include a reassessment of the effects to listed species while the action agency continues their operations, they may require the halting of activities until the reassessment can be completed, or they may include agreed upon corrective measures that are designed to compensate for the unexpected effects. These procedures will vary with individual circumstances and will be dependent on the environmental consequences that result, as well as the constraints of the action agency. When completing consultation, the Services must carefully consider the consequences of making incorrect assumptions. If the consequences are sufficient to result in a section 7(a)(2) violation, then the assumption in question must be closely monitored and accompanied by compensatory measures that can be implemented to avoid such violation in the event of the assumptions failure. Again, any compensatory measures must be jointly developed and agreed upon.

Following is an example of the appropriate use of assumptions in the consultation process.

> A land management agency requests programmatic consultation on the implementation of a road maintenance program on their land management unit. This area encompasses an entire recovery unit for an endangered butterfly species and supports more than 30 known occupied areas. The land management agency has implemented this road maintenance program for many years, but it has only recently come to their attention that they should complete section 7 consultation on the program's implementation.
>
> The butterfly species appears to be maintaining its population numbers in the management area and upon further investigation the action agency and Service determine that the butterfly species is actually using puddles that form in road potholes to obtain nutrients. While this is a beneficial effect of maintaining the road system, an undetermined number of butterflies are killed through vehicular collisions.

While evaluating the effects of the proposed action, the Service discovers that the only information regarding effects provided by the action agency is that while the proposed management activities have been implemented in the past the butterfly population size has remained steady, thus indicating that the proposed actions will not jeopardize the continued existence of the species. The Service's response to the action agency is that while this is an indication that the butterfly population may have reached an equilibrium under the current management scheme, to determine the effects of the action (and thus whether jeopardy is avoided), the size of the current population (population size with the proposed action) must be compared to the population size that would exist without the proposed action. This analysis will provide an indication of the effects of the proposed action and allow for an evaluation of the jeopardy potential. Without completing such an analysis the Service may fail to recognize the potential that while the butterfly population has remained stable under the existing management regime, this management may have actually kept the population from expanding and populating other important areas, thus limiting the likelihood of the species surviving and recovering.

While working with the action agency the Service determines that to evaluate the effects they need to obtain information regarding: (1) the number of miles of roads that occur within butterfly habitat; (2) the average number of potholes that exist per mile of road; (3) the frequency of pothole use by butterflies; (4) the average number of vehicles that use the roads per unit of time; and (5) the frequency with which a single vehicle strikes butterflies. In an effort to assist in evaluating the effects of their proposed action, the action agency determines that there are 50 total miles of road within butterfly habitat and based on a quick survey, there is an average of 30 potholes capable of puddling water per mile of road. After reviewing the scientific literature, base on previous studies in similar areas, the Service determines that it is reasonable to expect five percent of the butterflies on the road to be taken via vehicles. However, no information can be found regarding the frequency of pothole use by the butterflies or the average number of vehicles that use the roads per unit of time.

To address these areas of uncertainty, the Service and action agency meet and jointly develop reasonable assumptions to use for the missing pieces of information. Based on anecdotal observations of the action agency's biologists, an assumption regarding pothole use of 15 butterflies per pothole during the active hours of the day over the 38-day average flight season is jointly developed. Based on the anecdotal observations of the action agency's maintenance staff, an assumption of 30 cars per hour during the active hours of the day during the flight season is developed. These assumptions are clearly identified in the biological opinion and are used by the Service to complete an effects analysis. The results of this analysis indicate that the proposed action is not likely to jeopardize the continued existence of the butterfly species. However, after assessing the sensitivity of the effects analysis to the validity of the assumptions, the Service determines that changes in the assumptions could greatly affect the outcome of the effects analysis and, therefore, of the impacts of the resulting incidental take. For this reason,

under 50 CFR 402.14(I)(3), with the agreement of the action agency, the Service requires the action agency to conduct monitoring during the first two years of project implementation to confirm the accuracy of the assumptions. Should the monitoring indicate that the assumptions are inaccurate, the consultation would be reinitiated and the effects analysis revised.

Note that in the above example if the action agency had determined that they were unable to complete the monitoring, then the Service would have had to complete the effects analysis using the "reasonable worst case" values for the areas of uncertainty. Thus, it is essential that both the assumptions as well as the needed monitoring be jointly developed and agreed upon.

PROGRAMMATIC INFORMAL CONSULTATION

For groups of projects or programs that will produce future projects that are not likely to adversely affect listed resources, programmatic informal consultation can be completed. Such an approach can lead to better assessments of landscape-level impacts, workload savings, and strengthened administrative records. The greatest workload savings is achieved when the specifics of future actions are know with sufficient detail to complete a "batched concurrence." Under this approach a single concurrence document is produced for a group, or "batch," of projects that are not likely to adversely affect listed resources. While the short-term workload savings for doing a tiered or appended programmatic informal consultation may not be as great without some form of "batching" because the project-specific documentation created is similar to a standard concurrence letter, tiering or appending to a programmatic document may still strengthen the Federal Government's administrative record. In addition, such an approach can produce sufficient guidance for action agencies to ensure that their actions will avoid adverse effects to listed resources. Both of these factors can provide long-term workload savings. For information on the procedures for completing programmatic informal consultation, see the "PROCEDURES FOR CONDUCTING PROGRAMMATIC CONSULTATION" section below.

PROGRAMMATIC FORMAL CONSULTATION

For groups of projects or programs that will produce future projects that are likely to adversely affect listed resources, programmatic formal consultation should be conducted and a programmatic biological opinion should be completed. It is important to remember that if even one project that is likely to adversely affect listed resources will result from implementation of the program or guidelines, then formal consultation must be conducted and a complete biological opinion produced. In addition, if such activities are going to result in incidental take, then the biological opinion should be accompanied by an incidental take statement. Depending on the level of project-specific information available at the time of the program-level consultation, the incidental take statement may require a project-level review before the incidental take exemption takes effect. Additional information regarding incidental take and incidental take statements can be found in the sections that follow below.

Program-level Biological Opinions

For groups of projects or programs that will produce future projects that are likely to adversely affect listed resources, regardless of the approach used, programmatic formal consultation must be conducted and a program-level biological opinion must be completed. In the next section ("PROCEDURES FOR COMPLETING PROJECT-LEVEL CONSULTATION") some of the approaches for completing project-level consultation are discussed. These approaches are used in combination with the development of program-level biological opinions. For this reason it may be useful to review this section again once you have completed your review of the following sections.

Though there are some differences in the program-level consultation processes depending on which approach is pursued, program-level biological opinions contain all of the elements found in a standard biological opinion. The "PROCEDURES FOR COMPLETING PROJECT-LEVEL CONSULTATION" section below contains information regarding the differences in the approaches. However, each program-level biological opinion should contain at least the following:

1. Consultation History: Describe the history of activities that led the agencies to the development of the proposed action and the completion of biological opinion.

2. Description of the Proposed Action: Provide a detailed description of what is being proposed.

    A. If the specifics of the individual projects to be implemented under the action agency's program are known, this section should describe these projects in sufficient detail to allow complete effects and incidental take analyses to be developed. If sufficient information is provided regarding the future actions, additional project-level review is not needed; the program-level biological opinion will fulfill the action agency's consultation requirements and the program-level incidental take statement will provide the appropriate take exemptions (see "Batched Consultation Approach" section below).

    B. If at the time of programmatic consultation the specifics of the future projects to be implemented through the proposed program are not known in sufficient detail to determine the exact effects that are likely to result, this section should describe the proposed program (i.e., the standards, guidelines, and jointly developed assumptions) and the types of future actions that may result. The level of specificity for this portion of the document will vary depending on the level of detail provided by the action agency. Procedures for completing consultations on future actions

proposed under the program should also be identified (see "Tiered Consultation Approach" and "Appended Consultation Approach" sections below).

3. Status of the Species: Program-level biological opinions often address effects to numerous species. If there are many species, it may be appropriate to incorporate the species accounts as an appendix to the program-level opinion and simply summarize the information in the body of document.

4. Environmental Baseline: Again, if there are many species, it may be more appropriate to incorporate the specific environmental baselines for each species as an appendix, and include a discussion of the environmental baseline of the action area in more general terms in the main body of the opinion.

5. Effects of the Action: If sufficient information regarding the future individual projects is know, describe in detail the manner in which these actions will affect listed resources as in a standard biological opinion. If this level of detail regarding future actions is not known, evaluate the manner in which listed and proposed resources may be affected by individual future actions implemented in accordance with the standards or requirements of the action agency's program. This would include a discussion of the jointly developed assumption used to complete the effects analysis.

   To complete the latter process, the Service should evaluate the likely effects to listed species and designated critical habitat from projects implemented in accordance with the standards or requirements of the action agency's program. A "conservative" effects analysis must be conducted; that is, the benefit of the doubt must be provided to the species and any effects that may result from future actions must be analyzed. Ultimately, the effects analysis must show that when the program standards are applied to each project, the net aggregate effects of all projects will not be reasonably likely to jeopardize the continued existence of a listed species or adverse modify designated critical habitat.

   Thus, the effects analysis for programmatic biological opinions is completed on two levels. The first level evaluates the manner in which listed resources may be affected by the individual projects identified by the action agency, or, if specific projects are not identified, by individual projects designed and implemented in accordance with the standards or requirements of the action agency's program. The second level evaluates the potential landscape-level impacts to listed resources that may occur from implementing of all of the individual projects that may be developed under the proposed program. Again, if at the time of the program-level consultation individual projects are not sufficiently developed to

determine the specific effects that may result, the information provided by the action agency regarding the standards of the program is used to evaluate the full extent of impacts that may occur.

Thus, during the Services' analysis, the effects of all potential future actions that may be implemented under the program must be evaluated. For this reason it is essential that the action agencies and Services work together in pre-consultation to ensure that the agency's program contains sideboards that will provide the appropriate limits to potential future effects. If it is possible for an action to meet the standards of the program and result in certain effects, these potential effects must be analyzed. To handle this issue the action agency may specify limits on the impacts that are anticipated through implementation of the Federal program. These limits at times may be achieved through jointly limiting the project design, the period of time that the program-level biological opinion is in effect or the total amount of impacts allowed. For example, after five years of implementation or 300 acres of impact, there may be a requirement that the program-level consultation be reinitiated before continuing implementation. For additional information on this subject, see the "UNCERTAINTY" section above.

To ensure that the anticipated effects are not exceeded, the program-level biological opinion will identify procedures for monitoring the implementation of future projects and associated impacts. To accomplish this the effects section should contain an "Effects Tracking" subsection. This subsection should quantify the impacts, including incidental take, anticipated from implementation of the action agency's program. This quantification should use a set of metrics for that will be analyzed in each project-specific review document so the specific effects of all future projects can be tallied and compared to the total analyzed in the programmatic biological opinion. In this manner the Service and action agencies can ensure that the effects anticipated and analyzed in the program-level biological opinion are not exceeded during implementation of the future projects.

6. Cumulative Effects: Describe the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation. This section should be updated, as appropriate, whenever it is used to support activities implemented on the ground. For additional information on this, see the "Tiered Consultation Approach" and "Appended Consultation Approach" sections below.

7. Conclusions: Present the Services' opinion regarding whether the aggregate effects of the factors analyzed under "environmental baseline," "effects of the action," and "cumulative effects" in the action area - when viewed against the status of the species or critical habitat - are likely to jeopardize the continued

existence of the species or result in destruction or adverse modification of designated critical habitat.

8. Incidental Take Statement: While the primary purpose of conducting section 7 consultation is to insure the avoidance of jeopardy and adverse modification situations, a secondary purpose is to provide action agencies and their applicants with an exemption to the prohibitions of section 9 of the Act when appropriate. This is completed through the development of incidental take statements (ITS). Incidental take statements for programmatic biological opinions exempt the specific take anticipated to result from adoption of the "program" that is the subject of consultation. Based on the effects analysis, the programmatic incidental take statement should specify the maximum extent of incidental take that is anticipated through implementation of the action agency's program. This is a relatively straightforward process when the specific future projects to be implemented are described with sufficient detail to accurately anticipate the actual effects, and therefore, the specific incidental take, likely to result (i.e., when using the "batched consultation" approach to address the effects of multiple predetermined actions). Because the future proposed projects are known, the incidental take associated with them can be exempted and appropriate Reasonable and Prudent Measures, if any, along with associated Terms and Conditions that will minimize the impacts of the incidental take can be provided without the need for additional review.

   This issue is more complicated when addressing the effects of an action agency's "program." Because at this point in the consultation process it is likely that individual projects will not yet be developed, these incidental take statements are typically general in nature encompassing impacts from potential projects designed to fit within the program's standards, requirements, or criteria and they involve some form of future review and documentation. The manner in which they complete the future review and documentation will vary depending on the type of programmatic consultation process pursued (e.g., tiered or appended approaches). For information regarding incidental take statements for these types of consultation processes, see the "PROCEDURES FOR COMPLETING PROJECT-LEVEL CONSULTATION" section below and Appendix A.

Under the proposed amendment, the Secretary is required to specify the extent of incidental take that would not violate Section 7(a)(2) standard. The phrase "extent of take" is used to allow the Secretary flexibility in expressing the point at which incidental takings might result in a violation of Section 7(a)(2)... It is not intended that a quota necessarily be established, but rather that Federal agencies and permit or license applicants, if any, be provided with notice of the point at which incidental takings would result in a violation of Section 7(a)(2) of the Act. If the specified extent of take is exceeded, the Federal agency or permit or license applicant, if any, must immediately reinitiate consultation. (Senate Report No. 97-418, p.21)

9. Conservation Recommendations: identify discretionary actions the action agency can implement relevant to the proposed program and consistent with their section 7(a)(1) authority. These conservation recommendations serve several purposes. They can suggest how the action agency can assist species conservation in furtherance of their responsibilities under section 7(a)(1) of the Act. They may further minimize or avoid the adverse effects of future proposed projects on listed species or critical habitat. They may suggest ways to minimize or avoid the adverse effects of future proposed projects on proposed or candidate species. They may also recommend studies to improve the understanding of a species' biology or ecology, or of the effects of the action agency's activities.

10. Reinitiation - Closing Statement: Identify situations, if any, that meet one or all of the four reinitiation conditions. That is, (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered, (3) the action is modified in a manner causing effects to listed species or critical habitat not previously considered, and (4) a new species is listed or critical habitat designated that may be affected by the action.

PROCEDURES FOR COMPLETING PROJECT-LEVEL CONSULTATION

In this section three procedures that are appropriate for carrying out program-level consultations will be discussed. These procedures are the batched, tiered, and appended consultation approaches. These approaches may be used individually, or at times, in combination with each other or other streamlining techniques.

Batched Consultation Approach

"Project batching" is an established technique that has been used effectively to streamline section 7 consultations for well over a decade. Batching can be used both within a standard section 7 consultation process where a single consultation document is generated to meet the consultation requirements for multiple proposed actions, or in combination with other programmatic consultation techniques to further streamline consultation. The batched consultation approach is appropriate when the action agency has proposed several projects that all have sufficient information to conduct a complete effects and incidental take analysis. In other words, the location, timing, and procedures to be used in each proposed project must be known so the Services can fully anticipate their specific effects, including the specific individuals that are likely to be incidentally taken. This level of detail for each project is necessary to use the batched consultation approach.[3] Under these circumstances the Services can "batch" these

[3]Where this level of detail is lacking, the tiered or appended approaches may be used or appropriate assumptions may be jointly developed. However, careful consideration should be

multiple projects for evaluation within a single biological opinion or concurrence document. The procedures for completing batched consultation documents are the same as for completing standard consultation documents; however, depending on the number and complexity of the projects being batched, coordinating the evaluation of their effects can be challenging. To assist in addressing this issue it is recommended that effects tables be produced that identify the categories and extent of effects for each project. This can be a useful technique for assessing and totaling the effects of each project so the aggregate effects can be evaluated.

Tiered and Appended Consultation Approaches

Often action agencies need to consult on the effects of implementing a "program" prior to having specific projects sufficiently developed to conduct complete effects or incidental take analyses. For these types of consultations, either the tiered or appended approaches are more appropriate. Each involves the initial development of a program-level biological opinion that analyzes the potential effects of implementing the Federal agency's program, and then development of appropriate project-specific documentation that addresses the specific effects of each individual project that is proposed under the agency's program. With the tiered consultation approach, the Services complete a "project" biological opinion, including a project-specific incidental take statement, that tiers to the programmatic document. With the appended consultation approach, the Services produce project-specific documentation that is physically appended to the programmatic biological opinion and incidental take statement in an appendix. Note that while there is added predictability regarding the outcome of the project-level consultations due to the successful completion of the program-level consultation, it is still possible to reach a jeopardy or adverse modification determination due to changed conditions or unanticipated effects. However, the potential for such an outcome is extremely low. Following are procedures for implementing these approaches.

Tiered Consultation Approach

Tiered consultations follow what is often considered to be the "classic" programmatic consultation approach. Under the tiered programmatic consultation process, the project-level consultation requirements are completed using a project-level biological opinion as described below.

As individual projects (or batches of projects) are proposed under the program, the action agency provides project-specific information that describes each proposed action and the specific areas to be affected, identifies the species and critical habitat that may be affected, describes the anticipated effects, specifies, if appropriate, that the "anticipated effects from the proposed project are consistent with those anticipated and analyzed in the programmatic biological

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given to the use of assumptions due to the need to reinitiate consultation in the event that the assumptions fail, thus negating at least some of the benefits achieved from batching.

opinion," and describes additional effects, if any, not considered in the programmatic consultation.[4] The Service reviews this information for each proposed project and this project-specific review is appropriately documented in the project-specific or "lower-tier" consultation document as follows:

Concurrence. If it is determined that an individual proposed project is not likely to adversely affect listed species or designated critical habitat, the Service may complete its documentation with a standard concurrence letter that refers to the programmatic document (i.e., it "tiers" to it), and specifies that after reviewing the proposed project within the context of the action agency's program, the Service concurs that the proposed project is not likely to adversely affect listed species or designated critical habitat. It should be noted that in cases where the Service concurs that a "not likely to adversely affect" determination is appropriate, a standard "stand-alone" concurrence letter (i.e., one that does not "tier" to another document) may be used. However, tiering to a programmatic document may strengthen the Federal Government's administrative record.

Tiered Biological Opinions. If it is determined that the proposed project is likely to adversely affect listed species or designated critical habitat, even if the effects were considered in the program-level biological opinion, the Service completes a tiered biological opinion with a project-specific incidental take statement.[5] This document, while meeting the basic requirements of biological opinions as specified at 50 CFR 402.14(h), generally requires less effort to complete because it references back, or tiers, to the program-level biological opinion. When incorporating information by reference, the exact location (i.e., section name and page number) where the information can be found should be provided to minimize the level of effort the reader must expend to find the subject information. This process can result in project-level biological opinions being completed in as few as five or six pages. Project-level biological opinions should include at least the following elements:

(1) Introduction: Explain the relationship between the program-level and project-level biological opinions, and identify the information used to create each. This will generally include reference to the documents that were used to complete

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[4]For a discussion of the information to provide to initiate section 7 consultation, see 50 CFR 402.14(c). It may be appropriate for the action agency to reference, or tier to, the informational document(s) provided for the program-level (or "upper tier") consultation document.

[5]Note that it is not appropriate to provide a concurrence letter stating that the adverse effects of the proposed project were considered within the program-level consultation; a biological opinion is required for each action that is likely to result in adverse effects to listed species or designated critical habitat.

programmatic consultation as well as any other documents or information used to determine the effects of the proposed project.

(2) Project Description: Provide a short project summary. For example, "40 acres of suitable foraging habitat will be harvested from the panther watershed (township and range) of the Olivia ranger district using shelter wood harvest techniques that will leave 70 sq. ft. of basal area per acre. For a complete description of shelterwood harvest methods and restrictions employed by the ranger district in this timber harvest program, see the 'Shelterwood Harvest' section on page 12 of September 28, 2000, programmatic biological opinion (Service file number: 1-1-02-976)."

(3) Status of the Species and Environmental Baseline: Incorporate by reference the Status of the Species and Environmental Baseline sections from the programmatic biological opinion and an updated description of the environmental baseline incorporating effects that have occurred within the action area of the program (not simply the area affected by the specific project currently under review), since the last environmental baseline update. These effects include both those from other actions implemented under the action agency's program as well as actions unrelated to the program. In this manner each project-level biological opinion will essentially carry the updated environmental baseline for the action agency's program forward for use by subsequent project-level biological opinions.

(4) Effects Analysis. Include a detailed discussion of the effects of the proposed project on listed species and designated critical habitat. This will entail a summary of the effects of the proposed action and incorporation by reference of the pertinent portions of the effects analysis from the program-level biological opinion. Generally this section should specify what the proposed action will do to both individuals of the species that will be affected as well as the landscape, but it can refer back to the program-level biological opinion's discussion of these types of impacts and present any additional information on how the species and habitat will be affected by this specific project and how these impacts will affect the species' conservation. In general, the documentation presented in this step must be sufficient to show that the specific effects of the individual proposed project under review have been assessed. For example:

> "The proposed timber harvest is anticipated to result in the disruption of foraging activities of two individuals. [Provide a discussion of the specifics of the individuals to be impacted (e.g., past reproductive success if known, the role these individuals play in the species' conservation, etc.).] For a complete description of the manner in which

such disruptions of foraging activities impact this species, see the 'Timber Harvest' subsection of the 'Effects Analysis' section on page 7 of the June, 19, 2001, programmatic biological opinion."

This section should conclude with a statement regarding the consistency (or inconsistency) of the effects of the proposed project with the effects analyzed in the programmatic biological opinion.

(5) Updated Cumulative Effects Analysis: Cite the cumulative effects section in the program-level biological opinion and identify and analyze any additional cumulative effects for which information has been ascertained. Note that for this section of the project-level biological opinion, the action area of concern is that of the program, not simply the area affected by the specific proposed project under review. Therefore, each project-level biological opinion will essentially track the cumulative effects for the program. If at anytime it is determined that the total cumulative effects impacting the program's action area have increased to the extent that the effects to the listed resources have changed, the consultation at the program-level should be reinitiated.

(6) Conclusion. Provide the Service's opinion on whether the proposed project is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat. Note that it may be necessary to reinitiate consultation at the program-level if an individual project generated by the action agency's program results in a jeopardy or adverse modification determination, regardless of whether the action agency ultimately decides to implement the project. The fact that application of the program standards resulted in a proposed project that triggered a jeopardy or adverse modification determination indicates that the program has effects that the Services failed to properly anticipate during the program-level consultation.

(7) Incidental Take Statement: When using the tiered programmatic consultation approach, the Services develop a "tiered biological opinion" with an accompanying incidental take statement, if appropriate, for each individual project. Procedure for completing the incidental take statement are complicated by not having the future projects identified at the time of the program-level consultation. The complication in part comes from the nature of the section 7(a)(2) requirement that action agencies "insure" that their actions are not likely to jeopardize the continued existence of a listed species or adversely modify designated critical habitat. While section 7(a)(2) of the Act places an affirmative responsibility on the action agencies to adequately safeguard listed resources from the effects of their actions, under section 7(b)(4) the Services have an affirmative responsibility to identify the incidental take that is anticipated to occur from the

proposed action and then to develop RPMs and T&Cs for the action agency or their applicants to implement in order to minimize the potential impacts of the incidental take.

Because at the time of the program-level consultation the specific future projects that the action agency will implement are not yet developed, the specific effects that will result are not known with certainty. As previously stated, when such uncertainty exists the Services must provide the "benefit of the doubt" to the listed resources and complete what is sometimes known as a "worst case" effects analysis. While this procedure is appropriate for the effects analysis in order to ensure that the purposes of section 7(a)(2) of the Act are achieved, it is not appropriate for developing the incidental take statement. Once the effects analysis has been completed and "no-jeopardy" and "no-adverse modification" determinations are reached, then it is known that the worst effects, including any associated incidental take, the Services reasonably foresees will not violate section 7(a)(2). However, exactly which of these effects will occur is not yet known; hence, the need to conduct additional consultation when specific projects are developed. In some circumstances this would lead to the Services developing measures that are overly restrictive, thus needlessly burdening action agencies and their applicants with restrictive measures that are unnecessary. In other instances it may not be possible to develop meaningful conditions that will appropriately minimize the impacts of the specific take that results from future projects.

For these reasons, when developing incidental take statements for tiered program-level biological opinions, the Services will use the results of the effects analysis to identify the "maximum extent" of incidental take that may result from implementation of the action agency's program. This number can function as an indicator for action agencies to let them know when the additive effects resulting from their individual actions approach the limits of the Services' effects analysis. As this level of take is approached the action agency may need to reinitiate consultation with the Services to ensure that their activities are not disrupted due to unanticipated levels of impacts. However, because the exact incidental take that will occur is not known at the time of the program-level consultation, the Services cannot exempt it. The incidental take exemption will be provided in project-level biological opinions when the action agency can provide the specifics of their actions and the Services can identify the exact take that is likely to result and thus develop meaningful RPMs and T&Cs. The Services will develop standard language to handle this situation.

Because take is not exempted until the project-level consultation, final RPMs and T&Cs also are not developed until this time. However, at times it may be desirable for the Services to develop and identify at the program-level RPMs and T&Cs that they anticipate being included in project-level incidental take

statements. If this approach is taken, the Services may identify the circumstances under which such conditions would be incorporated or deemed unnecessary. This allows the action agency to plan for their implementation and, if desired, to incorporate them into their future project designs. The goal is to minimize the need for additional future conditions through the pre-consultation coordination and cooperation process. The program-level conditions would not become mandatory until the incidental take is actually exempted. Finally, in both program-level and project-level incidental take statements the Services should identify procedures for monitoring the impacts of the proposed incidental take. At times only some of the monitoring procedures identified in the program-level biological opinion may be appropriate for every proposed action. In these cases, the project-level biological opinion should specify which of the procedures is appropriate for the subject project. For language to use in tiered programmatic consultation incidental take statements, see Appendix A.

(8) Environmental Baseline Tracking: Provide a statement regarding the specific project's impacts to the environmental baseline (including a restatement of the amount of take that is anticipated) and a tallying of the overall impacts to the environmental baseline (including the overall amount of take) from all projects implemented under the programmatic consultation to date. The results of this section should be used to assist in creating the environmental baseline section for the next project-level biological opinion.

(9) Conservation Recommendations: Incorporate by reference any pertinent conservation recommendations from the program-level biological opinion and identify any additional conservation recommendations that are appropriate for the specific project under review.

Appended Consultation Approach

Unlike the tiered programmatic consultation approach, with the appended approach a single consultation document is generated. Then as individual projects (or batches of projects) are proposed, the action agency provides project-specific information that describes each proposed action and the specific areas to be affected, identifies the species and critical habitat that may be affected, describes the anticipated effects to listed species and critical habitat, specifies, if appropriate, that the anticipated effects from the proposed project are consistent with those anticipated in the program-level biological opinion, and describes any additional effects, if any, not considered in the programmatic consultation.[6] To initiate project-specific review, the action agency's project information and effects analysis should be accompanied by a cover letter

[6]For a discussion of the information to provide to initiate section 7 consultation, see 50 CFR 402.14(c).

specifying that the action agency has determined that the proposed project is consistent with the program-level biological opinion and reasonable and prudent measures and associated terms and conditions, if any. This cover letter should also request that the proposed project be appended to the program-level biological opinion and associated incidental take statement, if appropriate, to fulfill the agency's consultation requirements. The Service then reviews the information and effects analysis provided for each proposed project, documents the results of this review in accordance with the guidance provided below, and physically attaches this documentation to the program-level biological opinion in an appendix.

Concurrence. In the case of projects that the Services concur are "not likely to adversely affect" listed resources, the Service may complete its documentation with a standard concurrence letter that refers to the program-level consultation document and specifies that the Service concurs that the proposed project is not likely to adversely affect listed species or designated critical habitat. This letter may either be delivered to the action agency as a stand-alone document, or it may be appended to the program-level document. Again, attaching this concurrence to a program-level document may strengthen the Federal Government's administrative record.

Appended Biological Opinion. If after review it is determined that an individual proposed project is "likely to adversely affect" listed resources, is consistent with the program-level biological opinion, and will not jeopardize the continued existence of listed species or adversely modify designated critical habitat, the Services develop a project-level review document (usually two to four pages). This document is then physically attached to the programmatic biological opinion in an appendix. Project-level review documents should contain the following elements:

(1) Introduction. Explain the relationship between the program-level biological opinion and the project-level review document and identify any additional information used to create the review document.

(2) Project Description. Provide a short project summary. For example, "40 acres of suitable foraging habitat will be harvested from the Heli watershed (township and range) of the Goude ranger district using shelter wood harvest techniques that will leave 70 sq. ft. of basal area per acre. For a complete description of shelterwood harvest methods and restrictions employed by the ranger district in this timber harvest program, see the 'Shelterwood Harvest' section on page 12 of the December 7, 2001, programmatic biological opinion (Service file number: 1-1-02-976).";

(3) Status of the Species and Environmental Baseline: Incorporate by reference the Status of the Species and Environmental Baseline sections from the programmatic biological opinion and provide an updated description of the environmental baseline incorporating effects that have occurred within the action area of the

program (not simply the area affected by the specific project currently under review) since the last environmental baseline update. These effects include both those from other actions implemented under the action agency's program as well as actions unrelated to the program. In this manner the documentation for each individual project will essentially carry the updated environmental baseline for the action agency's program forward for use in subsequent project-level reviews.

(4) Effects Analysis. Include a detailed discussion of the effects of the proposed project on listed species and designated critical habitat. This will entail a summary of the effects of the proposed action and incorporation by reference of the pertinent portions of the effects analysis from the program-level biological opinion. Generally this section should specify what the proposed action will do to both individuals of the species that will be affected as well as the landscape, but it can refer back to the program-level biological opinion's discussion of these types of impacts and present any additional information on how the species and habitat will be affected by this specific project and how these impacts will affect the species' conservation. In general, the documentation presented in this step must be sufficient to show that the specific effects of the individual proposed project under review have been assessed. For example:

> "The proposed timber harvest is anticipated to result in the disruption of foraging activities of two individuals. [Provide a discussion of the specifics of the individuals to be impacted (e.g., past reproductive success if known, the role these individuals play in the species' conservation, etc.).] For a complete description of the manner in which such disruptions of foraging activities impact this species, see the 'Timber Harvest' subsection of the 'Effects Analysis' section on page 7 of the December 7, 2001, programmatic biological opinion (Service file number: 3-6-03-33).."

This section should conclude with a statement regarding the consistency (or inconsistency) of the effects of the proposed project with the effects analyzed in the body of the program-level biological opinion.

(5) Updated Cumulative Effects Analysis: Cite the cumulative effects section in the program-level biological opinion and identify and analyze any additional cumulative effects for which information has been obtained. Note that for this section of the project-level documentation, the action area of concern is that of the program, not simply the area affected by the specific proposed project under review. Therefore, the documentation for each individual project will essentially

track the cumulative effects for the program. If at anytime it is determined that the total cumulative effects impacting the program's action area has increased to the extent that the effects to the listed resources have changed, the program-level consultation should be reinitiated.

(6) Conclusion: Provide the Service's opinion on whether the proposed project is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat. If a "no-jeopardy" or "no-adverse modification" determination is reached, then this section should include language that appends the proposed project to the program-level biological opinion. Note that it may be necessary to reinitiate consultation at the program-level if an individual project generated by the action agency's program results in a jeopardy or adverse modification determination, regardless of whether the action agency ultimately decides to implement the project. The fact that application of the program standards resulted in a proposed project that triggered a jeopardy or adverse modification determination indicates that the program has effects that the Services failed to properly anticipate during the program-level consultation.

(7) Incidental Take Statement: Incidental take statements for the Appended approach are generated during the development of the program-level biological opinion and are general in nature describing the manner in which take is anticipated and evaluating the maximum extent of incidental take that may occur given the sideboards established by the action agency's program design standards. This maximum extent of anticipated incidental take is derived from information presented in the program-level effects analysis. As individual projects are proposed and evaluated, they will be appended to the programmatic ITS as appropriate. This process is used because while the design standards will be established at the time of program-level consultation, the specifics of individual projects (e.g., precise locations, exact methods and procedures, etc.) will not. Thus, while it is possible to evaluate the estimated overall effects, including take, that may occur across the landscape from implementation of projects that meet the program standards, it may not be possible to develop the appropriate RPMs and T&Cs necessary to minimize the specific take that will occur with each proposed project because these are likely to be dependent on the attributes of the specific project, project area, and individuals affected.

If appropriate, the program-level incidental take statement will contain RPMs and T&Cs that can be implemented on a broad scale (i.e., the plan-level scale) and involve minor adjustments or additions to the design standards; however, the goal is to eliminate the need for these types of adjustments through the pre-consultation coordination and cooperation process. Program-level incidental take statements may also contain a series of RPMs and T&Cs that may be pertinent to some projects, but not to others, with direction that the appropriate measures and

conditions will be identified and applied during the project-level review. This will provide the action agencies with an idea of the measures that are likely to be required to minimize the impacts of the take associated with each individual project. As each project is reviewed, the Service will evaluate the need for each of the RPMs and T&Cs previously identified in the program-level ITS, or for any additional RPMs and T&Cs necessary to minimize the impacts of the anticipated take. The project specific documentation should identify these measures in a format similar to that used in the ITS of the program-level biological opinion so they can be clearly identified. Note that at times, no additional RPMs will be needed. In these cases, the Service's project-level documentation should state that no RPMs and T&Cs are necessary beyond those contained in the program-level incidental take statement.

While each program-level biological opinion will contain an ITS, as appropriate, its take exemption will not take effect until each specific project is appended to it. To accomplish this, the project-level documentation for each appended project should specify that the take anticipated from implementation of the appended project is a subset of that anticipated in the program-level incidental take statement. For example:

> "Implementation of the proposed project is anticipated to result in the incidental take of two individuals associated with 38 of the 300 acres of habitat anticipated to be removed under the [action agency's] construction program that was analyzed in the October 28th, 2002, program-level consultation (Service file number: 2-3-01-76)."

In this way the programmatic ITS is essentially a "vessel" that is filled by the incidental take associated with the various projects as they are appended to the program-level biological opinion. When sufficient projects have been appended to the programmatic consultation to account for all the incidental take anticipated by the program-level ITS (i.e., when the "vessel" is full), no additional projects should be added without modification; any new projects proposed to be appended to the programmatic document would require reinitiation of consultation to determine whether coverage is appropriate (note that there are similar requirements for project effects; that is, when sufficient projects have been appended to the programmatic consultation to account for the effects anticipated by the program-level biological opinion, activities must stop and consultation should be reinitiated and, if appropriate, the biological opinion must be updated before additional projects may be appended to it). It is imperative that the

cumulative amount of incidental take exempted by the program-level ITS be appropriately tracked. For appropriate language to use in appended programmatic consultation incidental take statements, see Appendix A.

(8) Environmental Baseline Tracking and Conclusions: Provide a statement regarding the specific project's impacts to the environmental baseline (including a restatement of the amount of take that is anticipated) and a tallying of the overall impacts to the environmental baseline (including the overall amount of take) from all projects appended to the program-level biologic opinion and associated ITS to date. If the project is found to be consistent with the effects evaluated in the program-level biological opinion and will not exceed the total effects or incidental take anticipated in that biological opinion, state that the project is hereby appended to the program-level biological opinion and associated incidental take statement. The results contained in this section should be used to assist in creating the environmental baseline section for the next project-level review.

PROGRAMMATIC CONSULTATION MONITORING AND REVIEW

In addition to the monitoring associated with the confirmation of assumptions used in the effects analysis and the reporting requirements contained in the ITS, a comprehensive review of how the program-level biological opinion is working and whether its implementing procedures are being complied with should be conducted at least annually. During this review the environmental baseline should be reviewed and updated as needed to account for unanticipated effects or the lack of anticipated effects. In addition, the additive effects that resulted from the individual projects should be evaluated to ensure that the program-level biological opinion effects analysis is accurate. During this process it may be determined that the program-level biological opinion is functioning as anticipated and, therefore, activities should continue, or that adjustments should be made. Although this comprehensive review should be conducted at least annually, the program-level consultation should be reinitiated if at any time during implementation of activities it is determined that: (1) the amount or extent of incidental take exempted by the program-level biological opinion is exceeded; (2) new information reveals effects of the actions that may affect listed resources in a manner or to an extent not considered in the program-level biological opinion; (3) the action agency's activities are subsequently modified in a manner or to an extent that causes effects to listed resources that were not considered in the program-level biological opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action.

CONCLUSION

This guidance document contains several appropriate methods for completing programmatic consultation. Each approach may not be appropriate for every situation. The appropriate approach will depend on the specifics of each situation (e.g., the level of project specific information available at the time of consultation, workload and staffing issues, etc.). The

Services should consider these factors along with the desires of the action agency when determining the appropriate approach for each individual situation. However, the ultimate decision as to the appropriate consultation approach for any given situation remains with the Services.

Appendix A

This appendix will contain Incidental Take Statement language.

ATTACHMENT B

REQUEST TO APPEND AN ACTION TO THE PROGRAMMATIC BIOLOGICAL OPINION FOR SLOAN CANYON RESOURCE MANAGEMENT PLAN, CLARK COUNTY, NEVADA FILE NO. 1-5-06-F-416

Name of Action:

Requested by: Date:
Title:
Agency/Office
Phone No.

Species Affected:

Critical Habitat Affected: Yes ❑ No ❑

I. Description of Action and Action Area (include map)

A. Description of fire and suppression activities:

B. Habitat quality/suitability:

II. Measures Implemented to Minimize the Effects of the Proposed Action (may refer to specific terms and conditions in the Incidental Take Statement of the programmatic biological opinion):

A. Were these measures effective?

B. Recommendations for future programmatic actions:

III. Effects of Proposed Action on the Listed Species

A. No. of acres and plant communities disturbed:

B. Description of affected individuals of listed species:

C. Assessment of habitat rehabilitation recommended:

D. Are there additional effects of the action not considered in the programmatic biological opinion? If so, describe.

Attachment C

SECTION 7 FEE PAYMENT FORM

Entire form is to be completed by Federal agency and project proponent

Biological Opinion File Number: 1-5-06-F-416 (Appended action no.: APD ___)

Species: Desert tortoise (*Gopherus agassizii*)

Location of Fish and Wildlife Service Office that Issued the Opinion: Reno, Nevada

Project: _____

Amount of Payment Received: _____

Total Payment Required: _____

Date of Receipt: _____

Check or Money Order Number: _____

Number of Acres to be Disturbed: _____

Project Proponent: _____

Address: _____

_____

Telephone Number: _____

Authorizing Agency: Bureau of Land Management
4701 N. Torrey Pines Drive
Las Vegas, Nevada 89130

BLM Case Number: _____

Project Reviewed By: _____
Wildlife Staff

Make checks payable to: Clark County Treasurer

Deliver check to: Clark County Habitat Conservation
Department of Air Quality and Environmental Management
Post Office Box 558270
Las Vegas, Nevada 89155
(702) 455-3530

If you have questions call the Las Vegas Office of the U.S. Fish and Wildlife, Monday through Friday 7:30-4:30 PM, at (702) 515-5230.