



Desert Tortoise Recovery Office
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Desert Tortoise Science Advisory Committee Meeting
Draft Meeting Summary
May 16-17, 2005
Reno, Nevada

MAY 16

Goals and Objectives

1. Introduce the Desert Tortoise Science Advisory Committee
2. Review the current desert tortoise recovery landscape, including an assessment of the 1994 recovery plan and current work involving the tortoise
3. Provide desert tortoise researchers an opportunity to suggest research and recovery priorities to the Science Advisory Committee

Attendees

Paul Henson, FWS
Bob Williams, FWS
Roy Averill-Murray, DTRO
Sandy Marquez, DTRO
Amy Salveter, DTRO
Kristin Berry, SAC
Earl McCoy, SAC
Katherine Ralls, SAC
Michael Reed, SAC
Bob Steidl, SAC
Dick Tracy, SAC

Bill Boarman, USGS
Mary Brown, University of Florida
Mary Cablk, Desert Research Institute
Steve Corn, USGS
Todd Esque, USGS
Jill Heaton, University of Nevada, Reno
Thomas Leuteritz, Redlands Institute
Ron Marlow, University of Nevada, Reno
Bob Murphy, Royal Ontario Museum
Ken Nussear, USGS
Daren Riedle, Arizona Game & Fish Department
Don Swann, Saguaro National Park

Meeting Summary

1. Introductions/Meeting Objectives

Bob Williams and Roy Averill-Murray gave an overview of the Desert Tortoise Recovery Office and the role of the Science Advisory Committee

2. Desert Tortoise Recovery Plan Assessment Committee (DTRPAC) Review

Paul Henson and Bob Williams presented awards to those who participated in the Desert Tortoise.

Dick Tracy gave an overview of the DTRPAC review of the 1994 desert tortoise recovery plan, followed by an open discussion. Key issues included:

- Many recovery plan actions were not implemented, partly due to the complexity of implementing management actions.

- Analysis of synergistic effects of multiple threats is needed.
- Monitoring should be appropriate for the effect being measured, and monitoring for the effectiveness of management actions is needed.
- Monitoring trends over time with species – identifying stable or upward trending populations - such as the desert tortoise that have large annual variation may be difficult.
- Recruitment monitoring is needed but difficult to assess.
- Metapopulations may have played a historic role in desert tortoise population dynamics.

3. **Researcher Presentations**

Invited researchers presented an overview of current research being conducted relating to the Mojave desert tortoise. Presentations included studies on impact of URTD on population dynamics and basic physiological processes, health and disease, anthropogenic sources of mortality in tortoises, social behavior, techniques for assessing habitat conditions, headstarting and translocation, genomics project, predicting desert tortoise habitat in the Mojave Desert, use of K9's in desert tortoise surveys, raven predation, methods for estimating abundance and conducting range-wide monitoring, effects of translocation, importance of random sampling in study design, relationship between nutrition and URTD, and status of the Sonoran desert tortoise.

MAY 17

Goals and Objectives

1. Review the purpose, roles, and responsibilities of the Science Advisory Committee in the desert tortoise recovery effort
2. Identify individual committee member goals, suggestions, or concerns with the Science Advisory Committee's role in the recovery process
3. Review the current recovery criteria for the desert tortoise and consider whether modifications to these criteria are warranted; if so, begin the process of identifying what changes are needed and what additional information is needed to make those changes

Attendees

Bob Williams, Roy Averill-Murray, Amy Salveter, Sandy Marquez, Dick Tracy, Kristin Berry, Michael Reed, Earl McCoy, Bob Steidl, and Katherine Ralls

Meeting Summary

1. Introductions/Role of DTRO/SAC/Stakeholders in Recovery Planning Process

Bob Williams gave a summary of guidance from DOI to the DTRO on revision of the desert tortoise recovery plan. Highlights of the discussion include:

- A revised draft of the recovery plan is expected by the end of calendar year 2005.
- Revisions to the plan should be science based.

- Recovery planning should be done in 5 year blocks – what can be done in 5 years that hasn't been done? The plan will be reviewed every 5 years for updating based on current information.
- The 1994 recovery plan has been implemented to some extent, but not to the degree envisioned in the plan. BLM implementation requires development of management plans, which California has just been completed. Recovery plan revision should identify recovery actions that build on existing management plans.
- The SAC will stay in place after the recovery plan revision to assist with ongoing review and subsequent revisions.
- Bob Williams represents the SAC to upper management in the USFWS and the Management Oversight Group. The SAC will provide scientific guidance for management actions, and the DTRO will interface with stakeholders and federal managers. How the SAC will interface with stakeholders is up to the SAC. DTRO acts as a supportive role. Possibilities include a SAC representative accompanying Roy to meetings with stakeholders or a group of the SAC attending particular meetings in order to adequately represent the SAC's scientific findings on particular topics to federal managers and stakeholders.
- SAC provides the scientific foundation; stakeholders participate in the implementation. It is important that the SAC reaches consensus and speaks with one voice.

2. Science Advisory Committee Discussion on Recovery Planning Process

Discussion on the recovery planning process, in general:

- Problem of the reality of implementation of recovery actions. Some recovery actions identified in the '94 Plan are not practically implementable, given the reality of funding, etc. Recovery actions need to be grounded in reality.
- Recovery actions should be considered on a larger resource scale (i.e., consider other systems that may need conserved).
- Start with the '94 Plan – look at successes, failures, and new direction based on science for the next 5-10 years.
- Recovery actions should incorporate the realities of growth trends. Extended GAP analysis that incorporates project development areas, etc. may be useful. County build-out plans can be used to get a view of planned development. Nevada has land-use bills that may be helpful in analysis.

Discussion on the recovery plan revision and threats assessment process:

- SAC role is to identify recovery criteria, identify science-based goals, and provide direction.
- Threat assessment workshops based on The Nature Conservancy's (TNC) 5-S Framework were discussed as a mechanism to prioritize recovery actions by management agencies. The SAC was generally uncomfortable with relying on this tool to provide a long-term basis for evaluating threats, due to its subjective, consensus-based properties. Instead, the SAC preferred a more quantitative model of threats, as recommended in the DTRPAC report. Chapter 5 of this report identified

- the need to place a greater emphasize on the cumulative, interactive, and synergistic effects of multiple threats. It recommended that an assessment, based on data from research designed specifically to elucidate relationships between threats and mortality, should be used to identify the relative strengths of connections between threats and effects. Data should be represented in a classification system that characterizes threat by spatial extent, frequency, predictability, and intensity.
- The SAC identified the need to use a science-based model/process that can analyze a complex set of synergistic threats and assist with ranking priorities. A subgroup of the SAC (Dick Tracy, Michael Reed, Earl McCoy, and Katherine Ralls) will gather information on potential models that may be appropriate for analyzing a large set of synergistic threats. The model needs to be science-based, defensible for incorporation into the Recovery Plan, and adaptable for ongoing use.
 - However, the SAC recognized that developing such a model will not be possible within the short time-frame under which the recovery plan is expected to be revised. Therefore, TNC-based threat assessment workshops could provide a short-term process to identify priority management actions and can be used in conjunction with the SAC's synergistic threats model. The TNC 5-S Framework will provide for manager input at a regional level, based on their on-the-ground experience, with a fully documented rationale as to how/why threat rankings were determined. The threat assessment workshops can provide an interactive process between the SAC and managers. It should be clarified at the workshops how the input from the threat assessments will be used by the SAC to incorporate into the recovery plan revision process. The SAC needs fine scale information on the scope and severity of individual threats with the documented rationale of rankings.
 - Regional Recovery Action Plans will be developed based on the TNC threat assessment process with input from manager/stakeholder groups. These plans will include recovery actions in current land management plans, additional actions as needed, and implementation schedules. Use of the TNC process is a short-term solution to identify priority recovery actions, while providing the SAC with initial inputs into a synergistic threat analysis.
 - Information needed from the workshops to include in the SAC threat model:
 - Level 1- Threat Categories
 - Level 2- Specific Threats per Category
 - Scope – area (with on-the-ground locations when possible)
 - Severity – ranked 0-3 (none, low, med, high) and unknown
 - Given the time needed to develop a more sophisticated threats model and the lack of quantitative data available for such a model, development of the SAC threats model will be a long-term process, starting small and gradually building as specific data are accumulated by new research. This process is intended to facilitate adaptive management by providing feedback to land managers as the model is refined. The SAC also thought that comparison of the manager-based TNC assessment with a science-based model would be informative to identify discrepancies and areas that managers should focus more attention, as well as potential errors in the model.

Action Item: The DTRO will flesh out a list of threats from the literature and circulate electronically among committee members.

Action Item: The “Threats Model Subgroup” (Dick, Michael, Earl, and Katherine) will gather information on potential models that may be appropriate for analyzing a large set of synergistic threats.

Action Item: Dick and Earl will prepare a conceptual outline by June 24 that describes the process for building a scientific threats model.

Action Item: The DTRO will investigate means of conducting conference calls for SAC meetings and subgroups.

3. Recovery Criteria

The SAC briefly discussed recovery criteria, especially reviewing difficulties in measuring the current primary criterion of a stable or increasing population trend for 25 years. Difficulties with this criterion include 1) low power to differentiate between stable populations and moderately declining populations and 2) continued habitat loss and reduced range placing greater pressure on remaining habitat to sustain faster-growing populations.

A new paradigm for recovery may be necessary to ensure that recovery criteria can be accurately measured with certainty and can accommodate the realities of obtaining recovery in the current human-dominated landscape. Part of this paradigm may require re-thinking the reliance on traditional hypothesis-based “tests” for recovery (e.g., H_0 : slope of population trend = 0). An alternative may be to identify thresholds of specific biological parameters which must be met within a certain level of precision for recovery.

Another significant issue for consideration is the reliance on reserve-level management at the scale (1000 square miles) recommended in the current recovery plan. This appears to be impractical based on experience over the last 10 years. There was discussion around the possible need for more overt actions, such as developing/facilitating population source areas with headstarting and using experimental management zones that are restoration focused.

Action Item: All members will think about recovery criteria and measurable parameters for success and bring more specific, fleshed out ideas for improvement to the next meeting.

Next Meeting

The next meeting is scheduled for July 20-21 in Reno and will focus primarily on recovery criteria.