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Working to protect and restore Western Watersheds

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Roy Averill-Murray
Desert Tortoise Recovery Office
U.S. Fish and Wildlife Service
1340 Financial Blvd, #234
Reno, NV 89502

RE: The Fort Irwin Desert Tortoise Translocation and the Development of Translocation Guidelines.

Dear Roy:

I am writing to you in your capacity as Coordinator of the Desert Tortoise Recovery Office (DTRO) to urge you to take specific actions to address the problems that have arisen in the Fort Irwin desert tortoise translocation project and that may occur in future large-scale translocations. Based on newspaper reports, more than 40 tortoises have died since the translocation began 2 months ago. This includes translocated and resident adult tortoises that have been depredated by canids, and a number of young "head-started" tortoises that came from the one of the Fort Irwin Study Site (FISS) pens.

The results of the translocation are still being analyzed and have not yet been made public, so it is unclear exactly how many tortoises have died as a result of the translocation. My understanding is that transmitters were removed from many of the relocated tortoises, making precise monitoring of take problematic. However, presumably the total number of tortoise mortalities can be estimated by extrapolation from the proportion of transmitters that have died.¹ According to one reporter I spoke to, at least 50% of the translocated tortoises had their transmitters removed when they were released at the translocation site. If this is so, the estimated take seems outlandishly high especially given that at least some of this take could have- and should have- been avoided.

As you may have seen in the Los Angeles Times article of May 11, 2008², I was quoted as saying "the U.S. Fish and Wildlife Service had identified canine attacks as possible threats even before the project got underway. So I'm surprised the scientists are surprised that tortoises are becoming targets." I thought it might be useful to provide some background to this quote because I believe (as do others) that the probability of depredation was not just foreseeable but also foreseen by the Service. Regrettably, contingencies for this and other potential problems were simply not incorporated into the translocation plan.

Desert tortoise depredation by coyotes has been documented at least as far back as Woodbury and Hardy (1948) who found tortoise remains in coyote scat. More recent references to tortoise depredation by coyote can be found in Boarman (2002). Based on their observations of tortoise fatalities, Woodbury and Hardy concluded that coyote predation on desert tortoise increased when rabbit populations were low.

¹ Although it is possible that transmitters may attract the attention of predators this has not been seen with desert tortoises (see Boarman et al, 1998).

² Available at: <http://www.latimes.com/news/local/la-me-tortoise11-2008may11,0,5101478.story>

In his review, Boarman (2002) also explores the coyote-desert tortoise relationship, and the hypothesis that coyotes switch to predating desert tortoises following drought-induced reduction in the coyotes' normal prey. The more recent study by Field et al, 2007 also includes an extensive review of the topic in the discussion section.

In 2004, the Service released its Biological Opinion for the Fort Irwin expansion (USFWS 2004). This reviewed all aspects of the proposed expansion including the proposed desert tortoise translocation. The Biological Opinion discusses the Bird Springs Valley, Nevada desert tortoise translocation study conducted by Ken Nussear (USFWS 2004, pages 40-41). It notes that predation by canids was the cause of death for all but one of the resident and translocated desert tortoises that died in the first year (USFWS 2004, page 40). The Biological Opinion concludes: "In summary, predation comprised the most dramatic source of mortality for both translocated and resident desert tortoises over the 3 years of the study." (USFWS 2004, page 41).

The Biological Opinion cites the source of the Bird Spring Valley data as an unpublished communication from Ken Nussear. Subsequently, his thesis, which includes Bird Spring Valley translocation data, was published (Nussear, 2004). In his thesis, Dr. Nussear reports that at Bird Spring Valley, 7 of 53 (13%) resident and 7 of 48 (15%) translocated tortoises were lost to predation by large canids in the first year. He concludes that predation was the leading cause of mortality.

Given the USFWS Biological Opinion, the background literature and current climatic conditions, canid depredation of desert tortoises following this translocation was clearly foreseeable. Appropriate mitigation measures (such as temporary protective fencing) should have been incorporated into the translocation plan.

Now, the agencies are considering lethal control of local coyotes and dogs as a stop-gap measure. The USFWS needs to fully analyze the consequences of this lethal control of local coyotes and dogs. Basic questions that the USFWS need to address include assessing the likely effectiveness of coyote removal at reducing depredation. Or would coyote removal simply result in packs of hungry coyotes moving in from areas adjacent and occupying the now vacant territory, potentially compounding the problem. The USFWS should also consider the long-term consequences of coyote control on the local desert ecosystem. Will coyote removal trigger an increase in the local rabbit and black-tailed hare population and change the availability of tortoise food plants in subsequent years? How will the local kit fox population respond? Will coyote eradication lead to an increase in kit fox numbers and increased depredation of desert tortoise nests? What other environmental consequences might be triggered that could be detrimental to the survival and recovery of the desert tortoise?

A large number of head-started tortoises translocated from the FISS pens have also died reportedly by causes unrelated to predation. Natural rates of recruitment of wild tortoises are low and the 1994 Recovery Plan estimated that annual mortality of adults in a stable population at about 2% (USFWS 1994). Loss of a given cohort of young is believed to occur gradually over the 15-20 years it takes for desert tortoises to reach maturity. Indeed, published work from the FISS indicates that the annual mortality of cohorts of head-started tortoises is of the order of 3-5% per year excluding predation (Morafka et al., 1997). The Los Angeles Times article reported that 15 out of 70 (21%) young tortoises had died since they were moved. Given that this mortality is unrelated to predation, such a high mortality rate is a serious cause for concern.

The USFWS also needs to establish contingencies for long-term issues that may arise from the Fort Irwin translocation. Despite the fact that there is evidence that resident desert tortoises in the area west of Fort Irwin Road are infected with one or more of the *Mycoplasma* species that cause Upper Respiratory Tract Disease (URTD) (see Berry et al., 2008), some of the Fort Irwin tortoises have been

translocated west of Fort Irwin Road. Spread of *Mycoplasma* has been shown to be host density-dependent in other species such as house finches and domestic chickens (Hochachka and Dhondt, 2000) and this seems likely true for the desert tortoise too as evidenced by the rapid collapse of the high-density tortoise population at the Desert Tortoise Natural Area in the late 1980s. Given the well-known propensity of translocated desert tortoises to move long distances following translocation, the risk of triggering a URTD epidemic remains a serious concern. If the translocation sites had been restricted to east of Fort Irwin Road, the option of closing the culverts and gaps in the tortoise barrier along the road would have been available as a possible containment measure.

We all realize that moving tortoises on the scale involved in the Fort Irwin translocation is an important, albeit difficult task. The DTRO needs to ensure that all steps in a given translocation effort are well scrutinized, it needs to identify the problems and their root causes, and it needs to use that information to modify translocation protocols.

Accordingly, we strongly urge that you:

- (1) Place a hold on all long distance translocations of desert tortoise (i.e. relocation of tortoises to outside their home range) and all large-scale translocations until the DTRO develops firm translocation guidelines that fully incorporate contingency plans that accommodate all foreseeable short-term and long-term problems.
- (2) Have all translocation proposals rigorously peer-reviewed by independent scientists/experts that are unrelated to the agencies and/or organizations involved in developing the plans in addition to public and agency review.
- (3) Restrict any further translocations from Fort Irwin or from the Superior Valley expansion area to east of the Fort Irwin Road so that if an outbreak of URTD should result it could be contained by closing the culverts and gaps in the tortoise barrier along the road. If this is not possible, any relocation sites should be located outside the Desert Wildlife Management Areas (DWMA) as recommended in the 1994 Recovery Plan.

As you are aware, this issue is generating much public concern. The DTRO needs to immediately adopt proactive measures to both assure the public and to protect the desert tortoises.

If I can be of any assistance or provide more information please feel free to contact me by telephone at (818) 345-0425 or by e-mail at <mjconnor@westernwatersheds.org>.

Yours sincerely,

A handwritten signature in black ink that reads "Michael J. Connor". The signature is written in a cursive style and is positioned above a horizontal line that extends to the right.

Michael J. Connor, Ph.D.
California Science Director
Western Watersheds Project

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