From: Susan D. Radzinski [mailto:sradz@lanl.gov]
Sent: Friday, January 28, 2005 9:44 AM
To: kIRK.W.OWENS@saic.com
Cc: hathcock@lanl.gov; hansenl@lanl.gov
Subject: Owl Redelineation - again

Kirk,

Apparently this is too big to send all at once. It's coming to you in 4 e-mails; text; fig. 1; fig. 2; and fig. 3.

Here is the first draft of the owl habitat redelineations. Four of the seven AEIs have been examined as of January 2005. The Sandia/Mortandad, Los Alamos, Water/Cañon de Valle, and Pueblo AEIs have been examined. New boundaries have been proposed for three of the four examined. Continued work will include the last three AEIs and small parts of the original AEIs possibly overlooked.

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S-SWEIS Mexican Spotted Owl Habitat Evaluations

Introduction:

Work began in 2002 to develop a predictive, vegetation-based habitat model for Mexican Spotted Owl [Strix occidentalis lucida (MSO)] habitat located near Los Alamos National Laboratory (LANL), New Mexico. The previous MSO habitat model at LANL describes habitat based on a combination of topographical features and macro-level vegetation classifications. Large, landscape level changes due to fire, drought, and bark beetle vectored tree mortality have changed the landcover dramatically and refinements to the boundaries of MSO habitat at LANL are warranted.

Methods:

Micro-level habitat evaluations are being done within each Area of Environmental Interest (AEI) at LANL in areas that may no longer be suitable habitat and outside of AEIs in locations suspected of being suitable habitat by subject matter experts The vegetation data from the study sites are input into a logistic regression model developed by Hathcock *et al.* (2003). A score for the site is determined. This score is generally a number between zero and one. A score of zero indicated that a habitat was predicted to have a very low probability of sustaining MSO, and a score of one indicated that a habitat was predicted to have a very high probability of sustaining MSO.

Study sites with a score of 0.30 or less are considered poor and proposed to be kept out of or removed from the AEI. Study sites with a score of 0.70 or better are considered good and proposed to be retained or added to the AEI. Study sites with a score between 0.30 and 0.70 are marginal and considered on a case-by-case basis, being added or removed from the AEI based on the best biological information available for each area of potential habitat. This entails an evaluation of all the MSO habitat characteristics present by the principal investigators. Lastly, if marginal habitat occurs between areas of high-quality habitat, these areas are kept in the AEI in order to keep the core contiguous.

The new core boundaries are delineated within a 0.5 km buffer to the nearest viable habitat. Core boundaries will be established along readily recognizable geologic features or anthropogenic features in the terrain wherever possible. Since all the AEIs are located in canyons, this would facilitate the ease of identification of core boundaries when in the field.

Proposed changes are mapped with the new core and buffer boundaries, and the percent change is calculated for each AEI examined. None of these proposed changes in the Mexican spotted owl AEI boundaries will be implemented at LANL until they have been submitted to USFWS in a biological assessment and USFWS concurs that the modifications are appropriate.

Results:

Four of the seven AEIs have been examined as of January 2005. The Sandia/Mortandad, Los Alamos, Water/Cañon de Valle, and Pueblo AEIs have been examined. New boundaries have been proposed for three of the four examined. Continued work will include the last three AEIs and small parts of the original AEIs possibly overlooked.

The proposed changes to the Sandi/Mortandad AEI have been mapped (Figure 1) and the total change in area was a net reduction in size of 496 acres (42%) in core habitat and a net reduction in size of 439 acres (31%) in buffer habitat.

The proposed changes to the Los Alamos AEI have been mapped (Figure 2) and the total change in area was a net reduction in size of 88 acres (2.17%) in core habitat and a net reduction in size of 124 acres (3%) in buffer habitat.

The proposed changes to the Water/Cañon de Valle AEI have been mapped (Figure 3) and the total change in area was a net reduction in size of 318 acres (23%) in core habitat and a net reduction in size of 366 acres (18%) in buffer habitat.

The proposed changes to the Pueblo AEI have not been mapped yet, but the full AEI will be recommended for removal from protection. Only a few small fragmented patches of the AEI still contain viable habitat for the MSO.

Continuing work will include evaluating the Three-Mile, Pajarito, and Rendija AEIs. Additionally, further studies are warranted to examine habitat possibly overlooked in the four AEIs already examined.

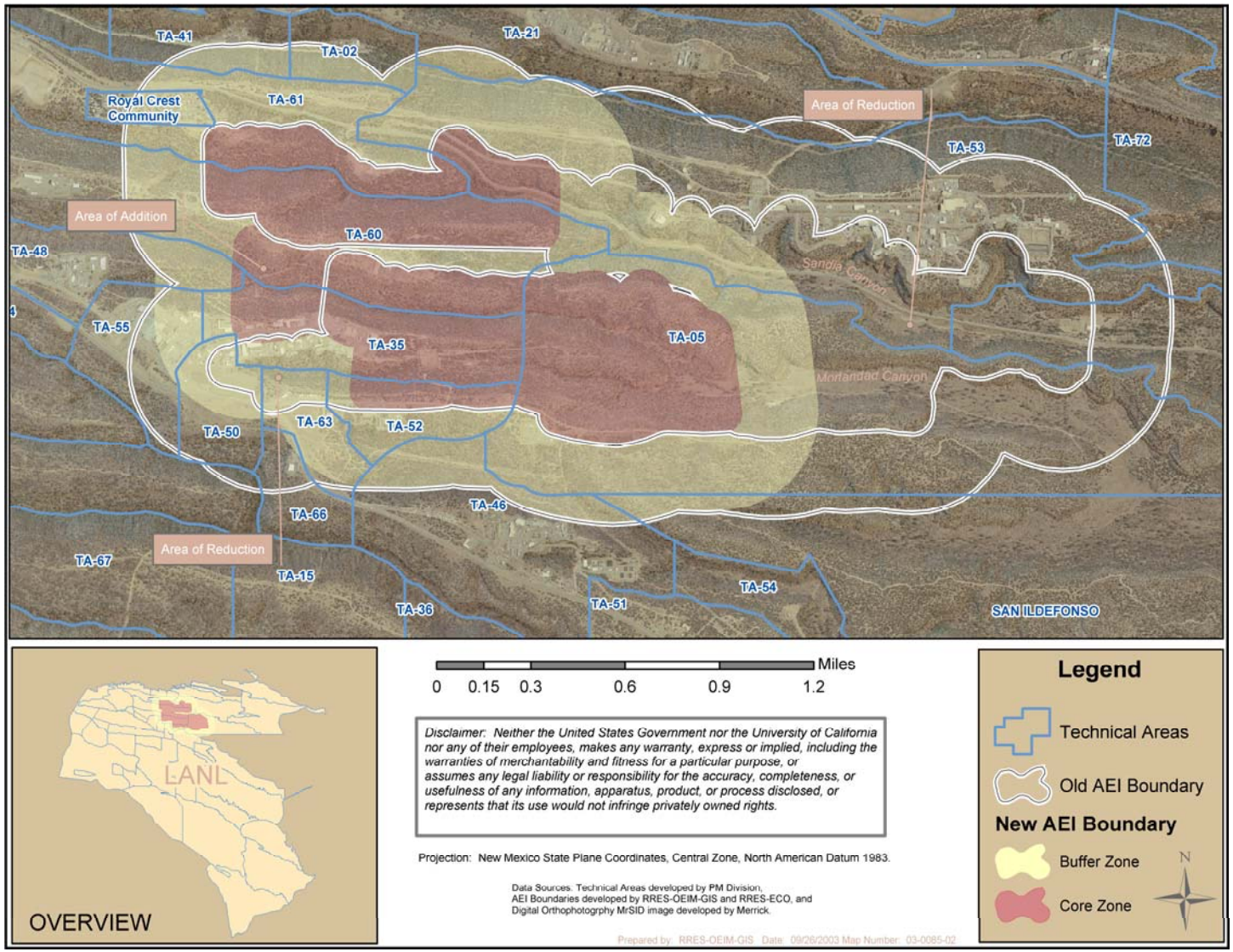

Figure 1. Proposed Core and Buffer Boundaries for Sandia–Mortandad AEI.

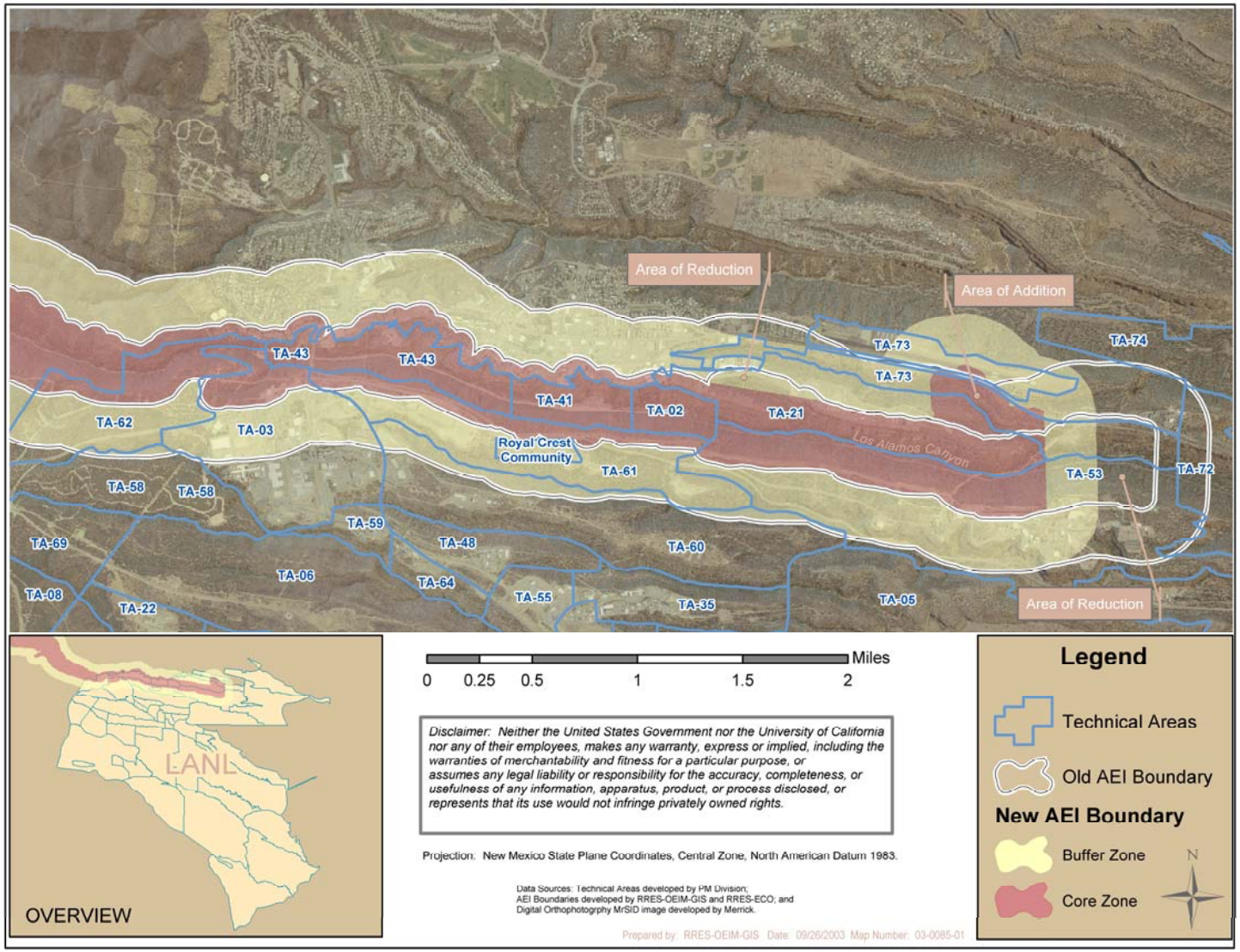

Figure 2. Proposed Core and Buffer Boundaries for Los Alamos Canyon AEI.

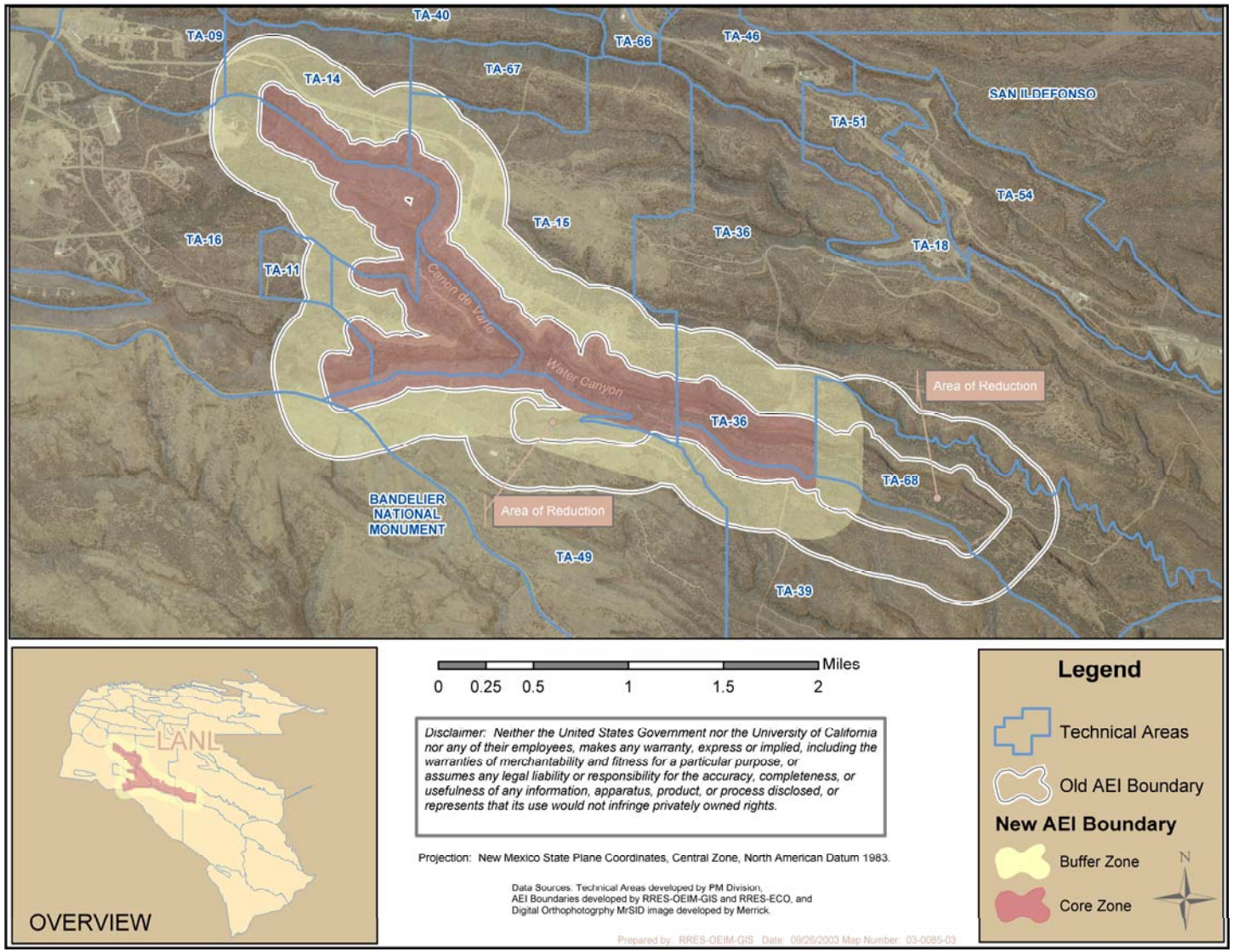

Figure 3. Proposed Core and Buffer Boundaries for Water Canyon–Cañon de Valle AEI.