Attachment 1.

RTLA (formally LCTA) Summary

The RTLA process was initiated in 1988 with a complete floral inventory of the Orchard Training Area (OTA) in 1988. Laminated specimens and traditional herbarium mounts of all species collected were assembled. OTA plant species lists are updated annually. Plant voucher specimens are housed in the Colorado State University herbarium, and laminated specimens are housed in the herbarium in the laboratory at the IDARNG Natural Resources office. An ongoing part of RTLA program is updating the plant collection and database as additional species are found on OTA. Each May, a general plant survey of the installation is done, seeking out places where additional species might be found and checking the condition of sensitive areas.

The RTLA monitoring program was initiated on OTA in 1989 with 200 core plots and 10 special use plots. Core plots are permanent plots located by a stratified random method (Warren *et. al.* 1990) and are used for monitoring changes in land condition. They are distributed throughout OTA with the exception of the Core Impact Area, where it is too dangerous to establish plots. Special use plots, subjectively located, are used to monitor changes in condition at locations of concern, such as unique habitat types, damaged areas, etc. In 1990, 50 RTLA plots were established on BLM land in the NCA within five kilometers of the OTA boundary. These plots were allocated by the stratified random allocation method used in establishing the core plots and are monitored annually using the same methods. These plots act as controls to separate effects of military training from other on-going influences, such as grazing and climate. Comparison of control plot data to core plot data is one of the most important uses of RTLA data.

Over time the number and distribution of core and special use plots has increased based on adaptive management requirements set forth in the IDARNG's Integrated Natural Resource Management Plan (INRMP) and Integrated Training Area Management (ITAM) program. Currently, there are 225 core plots (within the OTA boundary), 39 special use plots (inside and outside the OTA boundary), and 50 control plots (core plots outside the OTA boundary). We would be adding 40 core plots outside the OTA boundary to increase the total to 90 (Map 1).

The identified goals and objectives associated with the RTLA program are summarized below.

Goals and Objectives of RTLA data:

(1) Goal 1. Support the IDARNG Military Mission by managing training for sustainable use on the land.

(2) Goal 2. Provide an integrated environmental management capability to ensure future training on the OTA, natural resources conservation, and ecosystem viability.

(3) Goal 3. Ensure and provide data and analyses to document compatibility of IDARNG training with Public Law 103-64.

(4) Goal 4. Determine, recommend, and help implement management procedures that support military training with the least adverse environmental effects.

(5) Goal 5. Provide scientific data to support management recommendations and develop new ones.

(6) Goal 6. Provide GIS support and environmental education support for the intersection between environmental concerns and the military mission.

(7) Goal 7. Restore damaged areas.

(8) Goal 8. Understand critical ecosystem processes, rare species' needs, and anthropogenic influences on natural resources other than military, and how these interface with military training as practiced on OTA.

RTLA Set-Up and Recording Process

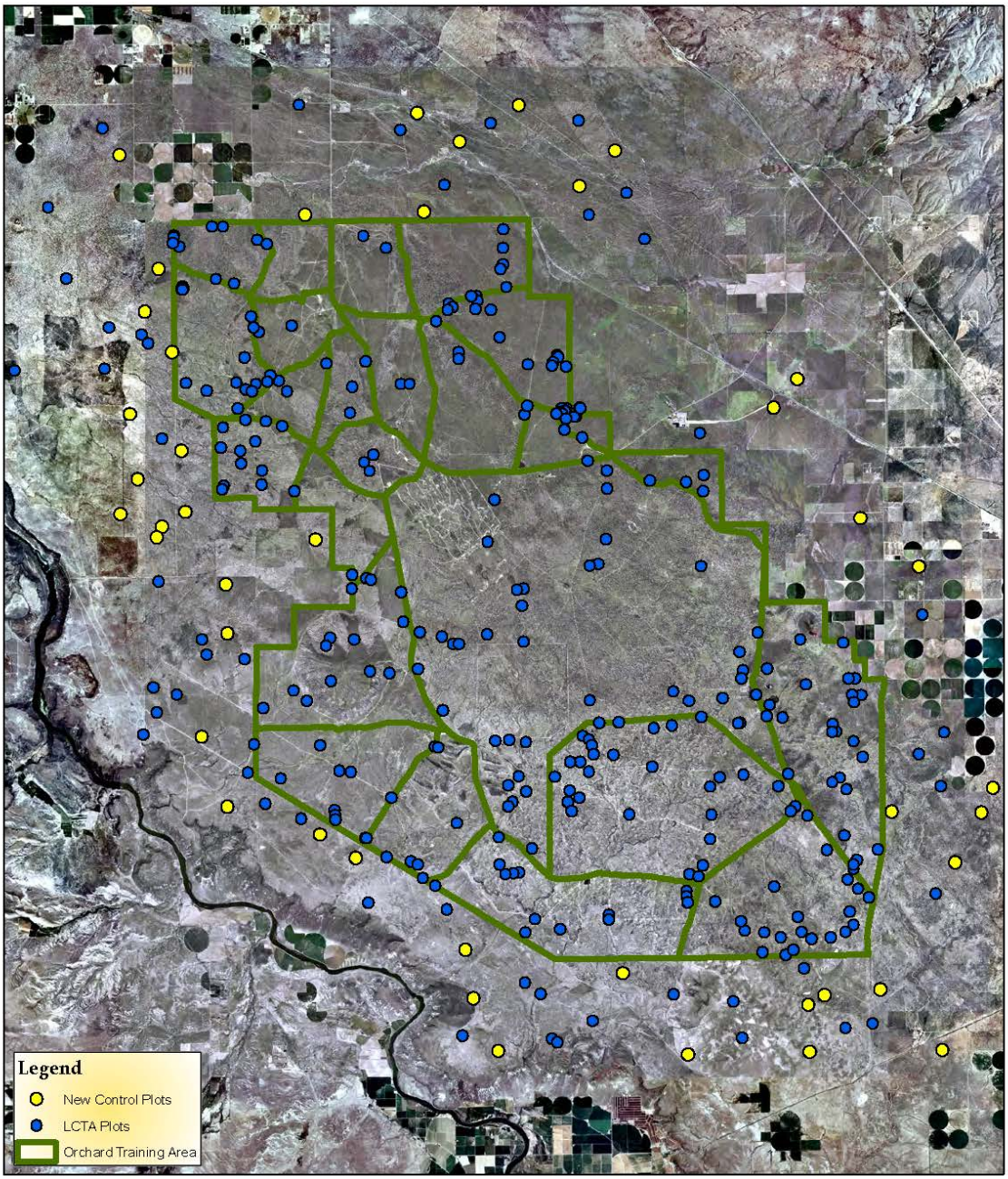
Each RTLA plot is selected to represent a specific vegetation community type. The overall number of plots by community type is based on a statistically valid sample size for the total area. Based on the number of samples for each community type, a GIS randomizer is used to randomly select the points for each plot based on the most current vegetation map. A plot azimuth for each plot is also randomly selected. In the event that the identified plot azimuth would take the plot outside the identified community type, three random azimuths are identified for each plot in. If the first does not work the second is used and so on, until one of the selected azimuths can be used. The head pin, a 2-foot long, 0.75-centimeter thick, steal post is placed at the identified location. This is the 0-meter mark. A 100-meter measurement tape is run out based on the identified azimuth and pulled tight. Marker pins, the same size as the head pin, are placed at the 25, 50, 75, and 100 meter marks. The pins are driven into the ground with three to four inches exposed. All care is used to limited damage from foot traffic to the site and a cursory clearance is completed to determine if any special status plant flora or fauna, or cultural resources would be affected.

Once a plot site is cleared, the plot is numbered and all five points along the line are recorded with a global positioning system (GPS). Once the line has been set up, a landscape photo is taken at the head pin (0-mark) with the plot number and year identified. The plot data is then recorded into a hand-held data recorder. Plot data is recorded using a line-point intercept method and includes ground and aerial cover, and if applicable a shrub belt. The shrub belt is based on a minimum of a six-meter belt for each species present. All shrub species above one decimeter are recorded three-meters from center on each side of the line, but can be reduced if sufficient shrubs are present to meet minimum statistical requirements. In addition to the shrub belt and transect data, observations on site characteristics and use (military training, livestock, recreation, etc.) are included in the comments. All data is recorded on an annual basis and downloaded into a data-base. The data is delivered to Colorado State University for annual and long-term analysis. Each site is visited only once per year and there is very little disturbance to the sites.

Literature Cited

Warren, S.D., M.O. Johnson, W.D. Goran, and V.E. Diersing. 1990. *An Automated, Objective Procedure for Selecting Representative Field Sample Sites*. Photogrammetric Engineering and Remote Sensing 56:333-335.

LCTA Plots



Scale 1:215,000

UTM Zone 11 North Meters
North American Datum 1983
GIS Systems, Environmental Management Office, IDARNG

0 1 2 3 4 5 Kilometers

0 1 2 3 4 5 Miles

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W E
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Map 1. RTLA Plot Locations-(Current and Proposed).