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Training Site Collection Protocol

**Southwest Regional Gap Analysis Project
(SWReGAP)**

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Introduction:

The Southwest Regional Gap Analysis Project (SW ReGAP) is an update of the Gap Analysis Program's mapping and assessment of biodiversity for the five state region (NM, AZ, CO, UT, and NV). It is a multi-institutional cooperative effort coordinated by the U.S. Geological Survey Gap Analysis Program. This packet is to be used when collecting training site data for mapping land cover. For more information visit our website (<http://leopold.nmsu.edu/fwscoop/swregap>), or contact us using the numbers and addresses listed under Contacts, page 4.

Purpose:

The primary objective of the SW ReGAP is to use a coordinated mapping approach to create detailed, seamless GIS maps of land cover, all native terrestrial vertebrate species, land stewardship, and management status, and to analyze this information to identify those biotic elements that are underrepresented on lands managed for their long term conservation or are "gaps." Participation in the project is open to all organizations that can provide funding, data, or expertise. Results from the SW ReGAP will benefit public agencies and private organizations with interests in maintaining biodiversity by developing knowledge of the distribution and spatial relationships of the elements of biodiversity and identifying the areas in which they are represented most efficiently.

Mapping Land Cover:

The mapping of natural and semi-natural land cover for New Mexico will occur over the next few years. Initially we are focusing on the collection of training site data, the acquisition and interpretation of ancillary data layers, and the integration of The Nature Conservancy (TNC) alliance level classification, the National Vegetation Classification System (<http://consci.tnc.org/library/pubs/class/index.html>) for land cover in New Mexico. This preliminary work will be focused at the regional level, increasing our ability to evaluate biodiversity and identify management gaps.

Land cover/Land use mapping will use Landsat 7 Thematic Mapper Data and biogeographically unique mapping units that span political boundaries. These mapping units, use a combination of topography and soils information to identify relatively large geographic areas that have similar topographic and biologic (soils, vegetation, etc.) characteristics. By segmenting the 5-state region into mapping zones we reduce the confusion and work required to interpret imagery over a diverse environment.

Within each mapping zone separate training sites need to be gathered for each corresponding Alliance. Because of the high variability of Alliances between and even within mapping zones the larger the sample size of training sites the easier it will be to interpret the imagery. Therefore we are attempting to gain volunteer cooperation in obtaining training sites. The following information is a guide to taking training site information.

Protocol for Collecting Training Site Data for SW ReGAP:

The following instructions should be followed when collecting training site data for the Southwest Regional Gap Analysis Project. Training site classification is based upon vegetation alliances described in the National Vegetation Classification System written by The Nature Conservancy. Each training site must be assigned an alliance classification based on that system. When collecting training site data follow the SW ReGAP Vegetation Field Form, and associated Explanations/Descriptions.

The following tools will be needed in order to fully complete the Field Form:

1. GPS unit, preferably with averaging capabilities.
2. Clinometer.
3. Compass.
4. DBH (Diameter at Breast Height) tape.
5. Range finder if possible, or 100m tape measure.
6. Camera, preferably digital.
7. Maps: BLM 1:100,000 property maps, SW ReGAP Mapping Zones for NM map (provided), and Forest Service/Wilderness maps if applicable.
8. National Vegetation Classification System manuals (Forest and Woodlands, Shrubland and Dwarf-Shrubland, and Herbaceous and Sparse Vegetation).
9. Vegetation identification books and plant press for unknown plants, if necessary.

Below are step by step instructions for collecting training site data:

1. At each site record your initials, date and plot ID. Follow instructions on Field Form to determine plot ID.
2. Locate training site: Training site should be as close to a uniform, homogenous stand of an alliance level dominant species as possible. The site should be no less than 90X90 meters (3X3 mapping pixels). Data should be collected from the middle of the site.
3. From the center of the site: take GPS location and give percent error if applicable. Also record elevation from GPS if it is receiving in 3D. Give your confidence level of your location of the site, based on the 5 categories given. Record the datum the GPS is receiving in, NAD83 is preferred.
4. Using clinometer and compass, record general slope and aspect in degrees of entire site.
5. Describe site: give size of site based on pixels (1 pixel roughly equals a 30X30 meter area). Using the categories on the Field Form, determine the sites slope shape, hydrologic class, physiognomic class, and landform. These

categories are described in detail on the Explanations/Descriptions page of the SW ReGAP Vegetation Field Form. Determine the forest structure of the site based on the 2 categories described.

6. A minimum of two photos should be taken at each site. Photos should be a good representation of existing vegetation. More photos can be taken if needed to better represent the site. A digital camera works best. Follow instructions on the Field Form for recording photo ID.
7. Give a brief description of the location surrounding the plot.
8. Recording vegetative species: for each category (Trees, Shrubs, Forbs, and Grasses) the dominant species full name should be recorded. For trees, determine DBH and height using DBH tape and clinometer. For all categories: Identify the percent composition that each species represents within its own strata, and determine percent cover visually, based on 2-Dimensional canopy cover for each species. Typically it is easier to decide the total canopy cover for each strata, and then break that down for each species. Each strata has 100 percent possible cover. Remember to decide cover vertically not horizontally, think of what a satellite would see.
9. Recording ground level cover: for each category determine the percent cover and albedo where indicated. Albedo is the percent of the solar radiation which is reflected back to the atmosphere. For Albedo, assign the proper coding using the provided color chart based on the instructions on the Field Form.
10. Determine the dominant soil type for the site. On the field form circle only one of the given categories.
11. Assigning alliance: based on all the data collected, determine the alliance level classification using the National Vegetation Classification manuals Give your confidence in that determination, and if possible determine a first alternative alliance.

Alliance Picture References:

The following pictures (pages 5-14) are general examples of the most common Alliances found in most mapping zones. These are only a very small representative sample of possible Alliances that are found within New Mexico. Because of the variability in Alliances between, and even within mapping zones, these pictures should be used only as references to existing training sites.

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